

**THE VASCULAR FLORA OF RARĂU MASSIF  
(EASTERN CARPATHIANS, ROMANIA). NOTE II**

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This second part of the paper about the vascular flora of Rarău Massif listed approximately half of the whole number of the species registered by the authors in their field trips or already included in literature on the same area. Other taxa have been added to the initial list of plants, so that, the total number of taxa registered by the authors in Rarău Massif amount to 1443 taxa (1133 species and 310 subspecies, varieties and forms). There was signaled out the alien taxa on the surveyed area (18 species) and those dubious presence of some taxa for the same area (17 species). Also, there were listed all the vascular plants, protected by various laws or regulations, both internal or international, existing in Rarău (*i.e.* 189 taxa).

Finally, there has been assessed the degree of wild flora conservation, using several indicators introduced in literature by Nowak, as they are: conservation indicator (C), threat conservation indicator (C<sub>R</sub>), zoophytisation indicator (W), and conservation effectiveness indicator (E).

*Key words:* Vascular flora, Rarău Massif, Romania, conservation indicators.

## 1. INTRODUCTION

A comprehensive analysis of Rarău flora, in terms of plant diversity, taxonomic structure, biological, ecological and phytogeographic characteristics, as well as in terms of the richness in endemics, relict or threatened plant species was published in our previous note (see Oprea & Sîrbu 2012). This second part of the paper continue to list the rest of the vascular plants (*i.e.* ferns, conifers, and flowering plants) from the investigated area, beginning with Boraginaceae plant family, ending with plants from Orchidaceae family. Also, there are made some considerations on the zoological categories of plant species in Rarău Massif.

## 2. MATERIALS AND METHODS

As in the first part, the floristic syllabus in this second part of the paper has been made using both old and new data of various authors. All the papers used here are given in the references.

Identifying the plant specimens was made using *Flora R. P. Române – Flora R. S. România* (1952–1976) [14] and *Flora Europaea* (1964–1980, 1993) [16–17]. The herbaria of Botanical Garden (IAGB), the University of Agricultural Sciences and Veterinary Medicine (IASI) and the Faculty of Biology in Iași (I) were used to check these specimens. Some of the plant specimens are stored in the Herbarium of Botanical Garden and the University of Agricultural Sciences and Veterinary Medicine in Iași. Some critical taxa have been revised according to the Central European authors [5]. All the taxa in the floristic list attached to this second part of the paper are given according to the order in *Flora Europaea*. The author's abbreviation of the taxa names are written according to Brummitt and Powell (2001) [1].

The following items are listed for each taxa: name, author(s), location (when a taxon is common it is given the name of the Rarău Massif, only), the degree of spreading and the altitude (in some cases), the habitats, ending with the live's form and floristic element.

### 3. RESULTS AND DISCUSSION

Among all the plant families, some of them are the best represented in the flora of Rarău Massif, *i.e.*: Asteraceae (172 species), Poaceae (83 species), Cyperaceae (50 species), Scrophulariaceae (48 species), and so on. Also, some of the above mentioned families count some of the largest genera, in terms of the number of species, as they are: *Carex* L. (41 species), *Centaurea* L. (26 species), *Hieracium* L. (21 species), *Festuca* L. (19 species), *Senecio* L. (14 species), *Poa* (11 species), *Cirsium*, *Pilosella* etc. (the figures inside the brackets represents the total number of species counted in Rarău Massif for each family and genera).

Since the first part of this paper [12] other taxa in the floristic conspectus were added; thus the total number of the taxa in Rarău vascular flora is of 1443 taxa (1133 species and 310 sspecies, varieties and forms). Therefore, some statistical data on flora has been reconsidered.

Apart from the first note of this paper [12] there were registered the next 18 adventive taxa in the vascular flora of Rarău Massif, namely: *Amaranthus albus* L., *A. blitoides* S. Watson ssp. *blitoides*, *A. cruentus* L., *A. hypochondriacus* L., *A. retroflexus* L., *Chenopodium foliosum* (Moench) Asch., *Ch. glaucum* L. fil. *wolffii* (Simonk.) Negrean et Dihoru, *Oenothera biennis* L., *Armoracia rusticana* P. Gaertn., B. Meyer et Scherb., *Datura stramonium* L., *Elsholtzia ciliata* (Thunb.) Hyl., *Veronica persica* Poir., *Chamomilla suaveolens* (Pursh) Rydb., *Conyza canadensis* (L.) Cronq., *Erigeron acer* L., *E. annuus* (L.) Desf. ssp. *annuus*, *Galinsoga parviflora* Cav., *G. quadriradiata* Ruiz et Pav., and *Xanthium spinosum* L.

In Rarău Massif's flora there are cited in various papers (see the cross-references at each taxa in the text of both botanical notes) 17 taxa whose presence are dubious, as the next ones: e. g. *Galium sylvaticum* L., *Campanula rotundifolia*

*L. ssp. rotundifolia*, *Thymus serpyllum* L., *Verbascum phlomoides* L., *Doronicum columnae* Ten., *Carex pilosa* Scop., *Eriophorum gracile* W. D. J. Koch ex Roth, *E. scheuchzeri* Hoppe, *Festuca porcii* Hack., *Phleum hirsutum* Honck., and so on.

A number of 34 taxa has a hybrid origins.

The largest part of references are included in the first part of the paper [12].

In order to have a look on the botanical importance of this interesting limestone massif of the Eastern Carpathians, we made an analyses following Nowak's method (2006) [9], concerning some indicators whose values are determined by the proportion of different types of plants (Table 1), with reference to their conservation status in the Romanian flora.

Table 1  
Protected vascular plants in Rarău Massif

No. crt.	1 Family	2 Taxon name	3 World Red List (IUCN, 1997)	4 International regulations	5 Endemic status in Romania	6 Red List (Oltean et al. 1994)	7 National laws which protect some plants
<b>Taxa under international regulations</b>							
1	<i>Asteraceae</i>	<i>Achillea oxyloba</i> (DC.) Sch. Bip. ssp. <i>schurii</i> (Sch. Bip.) Heimerl	LR	BC	nearend.	R	–
2	<i>Asteraceae</i>	<i>Arnica montana</i> L. ssp. <i>montana</i>	VU	Hab. Dir. 92/43, Annex Vb	–	VU/R	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
3	<i>Aspleniaceae</i>	<i>Asplenium adulterinum</i> Milde	VU	Hab. Dir. 92/43, Annex IIb	–	R	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
4	<i>Campanulaceae</i>	<i>Campanula patula</i> L. ssp. <i>abietina</i> (Griseb.) Simonk.	LR	BC, App. 5/1998	nearend.	–	–
5	<i>Campanulaceae</i>	<i>Campanula serrata</i> (Kit.) Hendrych	LR	Hab. Dir. 92/43, Annex IIb, Annex IVb	nearend.	–	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
6	<i>Orchidaceae</i>	<i>Cypripedium calceolus</i> L.	EN	Hab. Dir. 92/43, Annex IIb; BC App. I	–	VU/R	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
7	<i>Amaryllidaceae</i>	<i>Galanthus nivalis</i> L.	VU	Hab. Dir. 92/43, Annex Vb	–	nt	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
8	<i>Pinaceae</i>	<i>Larix decidua</i> Mill. ssp. <i>carpatica</i> (Domin) Šiman	VU	WLT 1998	nearend.	R	J.C.M. 284/1941; Decree law 237/1950; Ord. 1198; O.U.G. 57/20 June 2007
9	<i>Lycopodiaceae</i>	<i>Lycopodium annotinum</i> L.	–	Hab. Dir. 92/43, Annex Vb	–	–	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007

10	<i>Lycopodiaceae</i>	<i>Lycopodium clavatum</i> L.	–	Hab. Dir. 92/43, Annex Vb	–	–	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
11	<i>Lycopodiaceae</i>	<i>Lycopodium selago</i> L.	–	Hab. Dir. 92/43, Annex Vb	–	–	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
12	<i>Lycopodiaceae</i>	<i>Lycopodium inundatum</i> (L.) Holub	–	Hab. Dir. 92/43, Annex Vb	–	–	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
13	<i>Scrophulariaceae</i>	<i>Tozzia alpina</i> L. ssp. <i>carpathica</i>	–	Hab. Dir. 92/43, Annex IIb	–	R	Ord. 1198; O.U.G. 236/2000; Law no. 462/2001; O.U.G. 57/20 June 2007
14	<i>Typhaceae</i>	<i>Typha shuttleworthii</i> Koch & Sonder	LC	BC, App. I/1998	–	VU/R	–
<b>Endemics and near-endemics taxa</b>							
15	<i>Ranunculaceae</i>	<i>Aconitum moldavicum</i> Hacq. ssp. <i>moldavicum</i>	LC	–	nearend.	–	–
16	<i>Ranunculaceae</i>	<i>Aquilegia nigricans</i> Baumg. ssp. <i>subscaposa</i> (Borbás) Soó	nt	–	End.	R	–
17	<i>Rubiaceae</i>	<i>Asperula carpatica</i> I. Morariu	nt	–	End.	R	–
18	<i>Campanulaceae</i>	<i>Campanula carpatica</i> Jacq.	VU	BC	nearend.	R	–
19	<i>Campanulaceae</i>	<i>Campanula rotundifolia</i> L. ssp. <i>polymorpha</i> (Witašek) Tacik	–	–	nearend.	–	–
20	<i>Asteraceae</i>	<i>Centaurea pinnatifida</i> Schur ssp. <i>pinnatifida</i>	nt	–	End.	R	–
21	<i>Asteraceae</i>	<i>Centaurea phrygia</i> L. ssp. <i>rarauensis</i> (Prodan) Dostál	–	–	End.	R	–
22	<i>Asteraceae</i>	<i>Centaurea phrygia</i> L. ssp. <i>carpatica</i> (Porc.) Dostál	–	–	End.	R	–
23	<i>Asteraceae</i>	<i>Centaurea phrygia</i> L. ssp. <i>melanocalathia</i> (Borbás) Dostál	nt	BC	nearend.	R	–
24	<i>Asteraceae</i>	<i>Cirsium boujartii</i> (Piller et Mitterp.) Sch. Bip. ssp. <i>boujartii</i>	–	–	nearend.	R	–
25	<i>Caryophyllaceae</i>	<i>Dianthus spiculifolius</i> Schur	LC	–	nearend.	R	–
26	<i>Caryophyllaceae</i>	<i>Dianthus tenuifolius</i> Schur	nt	–	nearend.	nt	–
27	<i>Boraginaceae</i>	<i>Eritrichium nanum</i> (L.) Schrud. ex Gaudin ssp. <i>jankae</i> (Simonk.) Jáv.	–	–	End.	R	–
28	<i>Brassicaceae</i>	<i>Erysimum witmannii</i> Zaw.	–	–	nearend.	–	–
29	<i>Scrophulariaceae</i>	<i>Euphrasia salisburgensis</i> Funk	–	–	nearend.	R	–
30	<i>Poaceae</i>	<i>Festuca carpatica</i> F. Dietr.	VU	–	nearend.	R	–
31	<i>Ranunculaceae</i>	<i>Hepatica transsilvanica</i> Fuss	LC	–	nearend.	nt	–
32	<i>Brassicaceae</i>	<i>Hesperis moniliformis</i> Schur	nt	–	End.	R	–
33	<i>Asteraceae</i>	<i>Hieracium pojoritense</i> Wol.	LC	–	nearend.	R	–

34	Scrophulariaceae	<i>Melampyrum saxosum</i> Baumg.	VU	–	nearend.	R	–
35	Campanulaceae	<i>Phyteuma tetramerum</i> Schur	VU	–	nearend.	R	–
36	Poaceae	<i>Poa rehmannii</i> (Asch. & Graebn.) Wol.	LC	–	nearend.	R	–
37	Primulaceae	<i>Primula elatior</i> (L.) Hill ssp. <i>leucophylla</i> (Pax) Hesl.– Harr.fil. ex W. W. Sm. & H. R. Fletcher	LC	–	nearend.	R	–
38	Boraginaceae	<i>Pulmonaria filarszkyana</i> Jáv.	–	–	nearend.	nt	–
39	Boraginaceae	<i>Pulmonaria montana</i> Lej. ssp. <i>porciusii</i> Guşul.	LC	–	End.	R	–
40	Ranunculaceae	<i>Ranunculus carpaticus</i> Herbich	VU	–	nearend.	R	–
41	Dipsacaceae	<i>Scabiosa lucida</i> Vill. ssp. <i>barbata</i> Nyár.	LC	–	End.	R	–
42	Caryophyllaceae	<i>Silene nutans</i> L. ssp. <i>dubia</i> (Herbich) Zapal.	LC	–	nearend.	R	–
43	Caryophyllaceae	<i>Silene zawadzki</i> Herbich	LC	–	nearend.	R	–
44	Boraginaceae	<i>Symphytum cordatum</i> Waldst. & Kit. ex Willd.	LC	–	nearend.	–	–
45	Santalaceae	<i>Thesium kernerianum</i> Simonk.	–	–	End.	R	–
46	Lamiaceae	<i>Thymus bihoriensis</i> J alas	–	–	End.	R	–
47	Lamiaceae	<i>Thymus comosus</i> Heuff. ex Griseb.	–	–	End.	Nt	–
48	Lamiaceae	<i>Thymus pulcherrimus</i> Schur	–	–	End.	R	–
49	Violaceae	<i>Viola jooi</i> Janka	VU	–	nearend.	R	–
<b>Taxa in Romanian Red List (Oltean et al. 1994)</b>							
50	Pinaceae	<i>Abies alba</i> Mill.	EN	BC	–	EN	–
51	Liliaceae	<i>Allium albidum</i> Fisch. ex M. Bieb. ssp. <i>albidum</i>	–	–	–	R	–
52	Liliaceae	<i>Allium schoenoprasum</i> L. ssp. <i>sibiricum</i> (L.) Čelak.	–	–	–	R	–
53	Liliaceae	<i>Allium victorialis</i> L.	–	–	–	R	–
54	Poaceae	<i>Alopecurus laguriformis</i> Schur	–	–	–	R	–
55	Orchidaceae	<i>Anacamptis pyramidalis</i> (L.) Rich.	VU	–	–	VU/R	–
56	Primulaceae	<i>Androsace villosa</i> L. ssp. <i>arachnoidea</i> (Schott, Nyman et Kotschy) Nyman	–	–	–	VU/R	–
57	Brassicaceae	<i>Arabis soyeri</i> Reut. et A. Huet ssp. <i>subcoriacea</i> (Gren.) Breistr.	–	–	–	R	–
58	Ophioglossaceae	<i>Botrychium multifidum</i> (S. G. Gmel.) Rupr.	–	–	–	R	–
59	Ophioglossaceae	<i>Botrychium virginianum</i> (L.) Sw.	–	–	–	R	–
60	Apiaceae	<i>Bupleurum ranunculoides</i> L.	–	–	–	R	–
61	Brassicaceae	<i>Cardamine glanduligera</i> O. Schwarz	LC	–	–	–	–
62	Asteraceae	<i>Carduus defloratus</i> L. ssp. <i>glauca</i> Nyman	–	–	–	R	–
63	Cyperaceae	<i>Carex alba</i> Scop.	–	–	–	R	–
64	Cyperaceae	<i>Carex brunnescens</i> (Pers.) Poir.	–	–	–	R	–
65	Cyperaceae	<i>Carex capillaris</i> L. ssp. <i>capillaris</i>	–	–	–	R	–
66	Cyperaceae	<i>Carex fuliginosa</i> Schkuhr	–	–	–	R	–

67	Cyperaceae	<i>Carex rupestris</i> All.	-	-	-	R	-
68	Cyperaceae	<i>Carex strigosa</i> Huds.	-	-	-	R	-
69	Asteraceae	<i>Centaurea mollis</i> Waldst. et Kit. ssp. <i>maramarosiensis</i> (Jáv.) Soó	-	-	-	R	-
70	Asteraceae	<i>Centaurea triumfetti</i> All. ssp. <i>adscendens</i> (Bartl.) Dostál	-	-	-	R	-
71	Asteraceae	<i>Centaurea triumfetti</i> All. ssp. <i>stricta</i> (Waldst. et Kit.) Dostál	-	-	-	R	-
72	Orchidaceae	<i>Cephalanthera damasonium</i> (Mill.) Druce	nt	-	-	nt	-
73	Orchidaceae	<i>Cephalanthera longifolia</i> (L.) Fritsch	nt	-	-	nt	-
74	Orchidaceae	<i>Cephalanthera rubra</i> (L.) Rich.	VU	-	-	R	-
75	Ranunculaceae	<i>Cimicifuga europaea</i> Schipcz.	VU	-	-	R	-
76	Asteraceae	<i>Cirsium decussatum</i> Janka	VU	BC	-	R	-
77	Asteraceae	<i>Cirsium eriophorum</i> (L.) Scop.	-	-	-	K	-
78	Orchidaceae	<i>Coeloglossum viride</i> (L.) Hartm.	VU	-	-	R	-
79	Orchidaceae	<i>Corallorhiza trifida</i> Châtel.	VU	-	-	R	-
80	Asteraceae	<i>Crepis conyzifolia</i> (Gouan) A. Kern.	-	-	-	R	-
81	Asteraceae	<i>Crepis jacquinii</i> Tausch.	-	-	-	R	-
82	Orchidaceae	<i>Dactylorhiza cordigera</i> (Fr.) Soó	-	-	-	R	-
83	Orchidaceae	<i>Dactylorhiza incarnata</i> (L.) Soó ssp. <i>incarnata</i>	VU	-	-	R	-
84	Orchidaceae	<i>Dactylorhiza maculata</i> (L.) Soó ssp. <i>maculata</i>	VU	-	-	R	-
85	Orchidaceae	<i>Dactylorhiza majalis</i> (Rchb.) P. H. Hunt & Summerh.	VU	-	-	R	-
86	Caryophyllaceae	<i>Dianthus barbatus</i> L. ssp. <i>compactus</i> (Kit.) Heuff.	VU	-	-	R	-
87	Dipsacaceae	<i>Dipsacus strigosus</i> Willd.	VU	-	-	R	-
88	Asteraceae	<i>Doronicum carpaticum</i> (Griseb. et Schenk) Nyman	-	-	-	R	-
89	Lamiaceae	<i>Dracocephalum thymiflorum</i> L.	-	-	-	R	-
90	Onagraceae	<i>Epilobium alsinifolium</i> Vill.	-	-	-	R	-
91	Orchidaceae	<i>Epipactis atrorubens</i> (Hoffm.) Besser	VU	-	-	R	-
92	Orchidaceae	<i>Epipactis helleborine</i> (L.) Crantz	VU	-	-	R	-
93	Orchidaceae	<i>Epipactis palustris</i> (L.) Crantz	VU	-	-	R	-
94	Orchidaceae	<i>Epipogium aphyllum</i> Sw.	VU	-	-	R	-
95	Brassicaceae	<i>Erysimum</i> Zaw. ssp. <i>transilvanicum</i> (Schur) P. W. Ball	-	-	-	R	-
96	Poaceae	<i>Festuca versicolor</i> Tausch ssp. <i>versicolor</i>	VU	-	-	R	-
97	Gentianaceae	<i>Gentiana acaulis</i> L.	-	-	-	R	-
98	Gentianaceae	<i>Gentiana chusii</i> E. P. Perrier et Songeon	-	-	-	R	-
99	Gentianaceae	<i>Gentiana punctata</i> L.	-	-	-	R	-
100	Orchidaceae	<i>Goodyera repens</i> (L.) R. Br.	-	-	-	R	-
101	Orchidaceae	<i>Gymnadenia conopsea</i> (L.) R. Br. ssp. <i>conopsea</i>	VU	-	-	R	-

102	Orchidaceae	<i>Gymnadenia odoratissima</i> (L.) Rich.	VU	–	–	R	–
103	Orchidaceae	<i>Herminium monorchis</i> (L.) R. Br.	VU	–	–	R	–
104	Brassicaceae	<i>Hesperis matronalis</i> L. ssp. <i>candida</i> (Kit.) Hegi et E. Schmidt	–	–	–	R	–
105	Asteraceae	<i>Leontodon croceus</i> Haenke ssp. <i>rilaensis</i> (Hayek) Finch et P. D. Sell	–	–	–	R	–
106	Asteraceae	<i>Leontopodium nivale</i> (Ten.) Hand.–Mazz. ssp. <i>alpinum</i> (Cass.) Greuter	VU	–	–	VU/R	J.C.M. 148/1931; Decree law 237/1950
107	Asteraceae	<i>Leucanthemum rotundifolium</i> (Willd.) DC., non Opiz	VU	BC	–	R	–
108	Orchidaceae	<i>Listera ovata</i> (L.) R. Br.	VU	–	–	R	–
109	Orchidaceae	<i>Listera cordata</i> (L.) R. Br.	VU	–	–	R	–
110	Liliaceae	<i>Lloydia serotina</i> (L.) Rchb.	–	–	–	R	–
111	Menyanthaceae	<i>Menyanthes trifoliata</i> L.	–	–	–	R	–
112	Orchidaceae	<i>Malaxis monophyllos</i> (L.) Sw.	–	–	–	R	–
113	Pyrolaceae	<i>Monotropa hypopitys</i> L.	–	–	–	R	–
114	Pyrolaceae	<i>Monotropa hypophegea</i> Wallr.	VU	–	–	–	–
115	Boraginaceae	<i>Myosotis decumbens</i> Host ssp. <i>variabilis</i>	–	–	–	R	–
116	Boraginaceae	<i>Myosotis stenophylla</i> Knaf	–	–	–	R	–
117	Orchidaceae	<i>Neottia nidus-avis</i> (L.) Rich.	VU	–	–	R	–
118	Orchidaceae	<i>Nigritella nigra</i> (L.) Rchb. fil. ssp. <i>rubra</i> (Wettst.) Beauverd	VU	–	–	VU/R	J.C.M. 645/1938; Decree law 237/1950
119	Orchidaceae	<i>Orchis coriophora</i> L. ssp. <i>coriophora</i>	VU	–	–	R	–
120	Orchidaceae	<i>Orchis laxiflora</i> Lam. ssp. <i>elegans</i> (Heuff.) Soó	VU	–	–	R	–
121	Orchidaceae	<i>Orchis mascula</i> (L.) L. ssp. <i>signifera</i>	–	–	–	R	–
122	Orchidaceae	<i>Orchis militaris</i> L.	VU	–	–	R	–
123	Orchidaceae	<i>Orchis morio</i> L. ssp. <i>morio</i>	VU	–	–	R	–
124	Orchidaceae	<i>Orchis tridentata</i> Scop. ssp. <i>tridentata</i>	VU	–	–	R	–
125	Orchidaceae	<i>Orchis tridentata</i> Scop. ssp. <i>commutata</i> (Tod.) Nyman	–	–	–	R	–
126	Orchidaceae	<i>Orchis ustulata</i> L.	VU	–	–	R	–
127	Scrophulariaceae	<i>Pedicularis exaltata</i> Besser	VU	–	–	R	–
128	Campanulaceae	<i>Phyteuma spicatum</i> L.	–	–	–	R	–
129	Campanulaceae	<i>Phyteuma vagneri</i> A. Kern.	–	–	–	R	–
130	Lentibulariaceae	<i>Pinguicula alpina</i> L.	–	–	–	R	–
131	Lentibulariaceae	<i>Pinguicula vulgaris</i> L.	–	–	–	R	–
132	Pinaceae	<i>Pinus sylvestris</i> L.	VU	–	–	R	J.C.M. 284/1941
133	Orchidaceae	<i>Platanthera bifolia</i> (L.) Rich.	VU	–	–	R	–
134	Orchidaceae	<i>Platanthera chlorantha</i> (Custer) Rchb.	–	–	–	R	–
135	Apiaceae	<i>Pleurospermum austriacum</i> (L.) Hoffm.	–	–	–	R	–
136	Polemoniaceae	<i>Polemonium caeruleum</i> L.	–	–	–	R	–
137	Rosaceae	<i>Potentilla chrysantha</i> Trev.	–	–	–	R	–
138	Rosaceae	<i>Potentilla norvegica</i> L.	–	–	–	R	–
139	Primulaceae	<i>Primula halleri</i> J. F. Gmel.	–	–	–	R	–
140	Orchidaceae	<i>Pseudorchis albida</i> (L.) Á. et D. Löve	–	–	–	R	–

141	Scrophulariaceae	<i>Rhinanthus alecterolophus</i> (Scop.) Pollich	–	–	–	R	–
142	Polygonaceae	<i>Rumex arifolius</i> All. ( <i>R. alpestris</i> Jacq.) fil. <i>carpathicus</i> Zapal.	DD	–	–	–	–
143	Polygonaceae	<i>Rumex scutatus</i> L.	–	–	–	R	–
144	Grossulariaceae	<i>Ribes alpinum</i> L.	VU	–	–	R	–
145	Grossulariaceae	<i>Ribes nigrum</i> L.	–	–	–	R	–
146	Salicaceae	<i>Salix aurita</i> L.	VU	–	–	R	–
147	Salicaceae	<i>Salix bicolor</i> Willd.	–	–	–	R	–
148	Salicaceae	<i>Salix daphnoides</i> Vill.	–	–	–	R	–
149	Salicaceae	<i>Salix starkeana</i> Willd.	–	–	–	R	–
150	Asteraceae	<i>Saussurea discolor</i> (Willd.) DC.	VU	–	–	R	–
151	Saxifragaceae	<i>Saxifraga oppositifolia</i> L. ssp. <i>oppositifolia</i>	–	–	–	R	–
152	Asteraceae	<i>Senecio abrotanifolius</i> L. ssp. <i>carpathicus</i> (Herbich) Nyman	–	–	–	R	–
153	Asteraceae	<i>Senecio cacaliaster</i> Lam.	–	–	–	R	–
154	Rosaceae	<i>Sorbus austriaca</i> (Beck.) Hedl.	–	–	–	R	–
155	Liliaceae	<i>Streptopus amplexifolius</i> (L.) DC.	VU	–	–	R	–
156	Gentianaceae	<i>Swertia perennis</i> L. ssp. <i>alpestris</i> (Baumg. ex Fuss) Simonk.	–	–	–	R	–
157	Gentianaceae	<i>Swertia perennis</i> L. ssp. <i>perennis</i>	–	–	–	R	–
158	Taxaceae	<i>Taxus baccata</i> L.	CR	–	–	VU/R	H.C.M. 1743/1939; Decree law 237/1950
159	Orchidaceae	<i>Traunsteinera globosa</i> (L.) Rchb.	VU	–	–	R	–
160	Poaceae	<i>Trisetum alpestre</i> (Host) P. Beauv.	VU	–	–	R	–
161	Ranunculaceae	<i>Trollius europaeus</i> L. ssp. <i>europaeus</i>	VU	–	–	R	H.C.M. 1743/1939; Decree law 237/1950
162	Typhaceae	<i>Typha shuttleworthii</i> W. D. J. Koch & Sond.	VU	–	–	VU/R	–
163	Liliaceae	<i>Veratrum album</i> L. ssp. <i>album</i>	LC	–	–	–	–
164	Scrophulariaceae	<i>Veronica fruticans</i> Jacq.	VU	–	–	R	–
165	Violaceae	<i>Viola alpina</i> Jacq.	–	–	–	R	–
<b>Rare taxa</b>							
166	Ranunculaceae	<i>Aquilegia vulgaris</i> L.	–	–	–	–	–
167	Ranunculaceae	<i>Aconitum napellus</i> L. ssp. <i>tauricum</i> (Wulfen) Gayer	–	–	–	–	–
168	Liliaceae	<i>Allium senescens</i> L. ssp. <i>montanum</i> (F. W. Schmidt) Holub	–	–	–	–	–
169	Primulaceae	<i>Androsace lactea</i> L.	–	–	–	–	–
170	Ranunculaceae	<i>Aquilegia nigricans</i> Baumg. ssp. <i>nigricans</i>	–	–	–	VU	–
171	Rosaceae	<i>Aruncus dioicus</i> (Walter) Fernald	–	–	–	–	–
172	Asteraceae	<i>Aster alpinus</i> L.	–	–	–	–	–
173	Callitrichaceae	<i>Callitriche cophocarpa</i> Sendtn.	–	–	–	–	–
174	Cyperaceae	<i>Carex humilis</i> Leyss.	–	–	–	–	–
175	Gentianaceae	<i>Centaurium pulchellum</i> (Sw.) Druce	–	–	–	–	–
176	Caryophyllaceae	<i>Dianthus deltoides</i> L.	–	–	–	–	–



177	<i>Oenotheraceae</i>	<i>Epilobium dodonaei</i> Vill.	-	-	-	-	-
178	<i>Poaceae</i>	<i>Festuca ovina</i> L.	-	-	-	-	-
179	<i>Cistaceae</i>	<i>Helianthemum oelandicum</i> (L.) DC. ssp. <i>rupifragum</i> (A. Kern.) Breistr.	-	-	-	-	-
180	<i>Lamiaceae</i>	<i>Mentha</i> × <i>piperita</i> L.	-	-	-	-	-
181	<i>Lamiaceae</i>	<i>Mentha spicata</i> L.	-	-	-	-	-
182	<i>Poaceae</i>	<i>Molinia caerulea</i> (L.) Moench ssp. <i>caerulea</i>	-	-	-	-	-
183	<i>Aspleniaceae</i>	<i>Polystichum aculeatum</i> (L.) Roth	-	-	-	-	-
184	<i>Rosaceae</i>	<i>Potentilla cinerea</i> Chaix ex Vill.	-	-	-	-	-
185	<i>Ranunculaceae</i>	<i>Ranunculus serpens</i> Schrank ssp. <i>nemorosus</i> (DC.) G. López	-	-	-	-	-
186	<i>Grossulariaceae</i>	<i>Ribes rubrum</i> L. s. str.	-	-	-	-	-
187	<i>Rosaceae</i>	<i>Rosa villosa</i> L.	-	-	-	R	-
188	<i>Santalaceae</i>	<i>Thesium alpinum</i> L.	-	-	-	-	-
189	<i>Polypodiaceae</i>	<i>Woodsia ilvensis</i> (L.) R. Br.	-	-	-	R	-

Legend:

*Sozological categories*: EX = extinct in the wild; EN = endangered; CR = critical endangered; VU = vulnerable; LR = low risk; nt = near-threatened; R = rare; LC = least concern; DD = data deficient

*Regulations*: Hab. Dir. = Habitat Directive 92/43/EEC (1992); BC = Bern Convention (1978); WLT 1998 = World Red List of Trees (1998); Ord. 1198 = Order no. 1998 of Romanian Ministry of Environment; OUG = Government Emergency Ordinance no. 236/2000 & Law no. 462/2001; O.U.G. 57/20 June 2007 = Government Emergency Ordinance 57/20 June 2007; J.C.M. 148/1931 = Journal of Ministers Council 148/1931; J.C.M. 284/1941 = Journal of Ministers Council 284/1941; H.C.M. 1743/1939 = Council of Ministers Decision 1743/1939

*Others*: end. = endemics; nearend. = nearendemics; res. = nature reserve

In order to assess the degree of wild flora conservation in Rarău Massif, there were used several indicators recently introduced in the literature by Nowak (2006) [9], indicators whose values are determined by the proportion of different plant types (Table 2), with reference to their conservation status.

Table 2

Plant categories according to their conservation status and structure of these categories in Rarău flora

Terms	Symbol	Significations	Taxa number in Rarău
<b>Domesticophytes (Arheophytes+Indigenophytes)</b>	D	indigenous taxa (native), including arheophytes	1440
<b>Arheophytes</b>	A	taxa arrived in Central Europe before the year of 1500	?
<b>Sozophytes</b>	S	taxa on red lists, in one of the categories: EX, CR, EN, VU, DD	61
<b>Kindinophytes</b>	K	threatened taxa, in one of the categories: CR, EN, VU	58
<b>Tanatophytes</b>	T	extinct taxa (EX)	0 ?
<b>Nomosozophytes</b>	NS	protected taxa by various laws and as nature monuments	23
<b>Kenophytes</b>	K	alien taxa, arrived in Central Europe after the year of 1500	18

The next indicators reflects the degree of conservation of native flora (cf. Nowak, 2006) in Rarău Massif, as they are (Table 3).

*Table 3*  
Indicators of conservation status of vascular flora of Rarău Massif (cf. Nowak, 2006)

Specification	Conservation indicator (C)	Threat conservation indicator (C <sub>K</sub> )	Tanatophytisation indicator (R)	Sozophytisation indicator (W)	Conservation effectiveness indicator (E)
<b>Signification</b>	proportion of protected taxa by law of all native flora	proportion of taxa protected by law from the number of kindinophytes (CR, EN, VU)	disappeared percentage taxa of the total native flora	proportion of taxa in red lists of the total native flora	proportion of taxa protected by law of all those in red lists
<b>Computing formula</b>	$C = 100 \times NS / D$	$C_K = 100 \times NS_K / K_X$	$R = T \times 100 / D$	$W = 100 \times S / D$	$E = 100 \times NS / S$
<b>Rarău Massif</b>	1.59	25.86	0 ?	4.23	37.70
<b>Stânișoarei Mountains</b>	1.68	24.48	0 ?	5.27	32.00

From the Table 3 anyone can see that all of these indicators are fairly close by at two neighboring mountains (Rarău and Stânișoarei Mountains, Eastern Carpathians).

Still, some explanations on these indicators should be given, as follows:

a. both mountains (Rarău and Stânișoarei) have more or less the same number of legally protected domesticophytes (arheophytes and indigenophytes) (1.59 and 1.68) and the number of the protected taxa by Romanian laws and regulations of all native flora is pretty low (C);

b. the threat conservation indicator (C<sub>K</sub>) is lower (25.86), whereas a small proportion of taxa in categories CR, EN and VU are registered as protected under national laws and regulations (about 80% of threatened taxa, which are found in flora of Rarău Massif, are not receiving any conservation status in Romania);

c. the tanatophytisation indicator (R) is, at least apparently, an ideal value, *i.e.* zero (0) (however, we could not accurately determine whether some taxa cited in Rarău's flora are disappeared in the meantime or are too rare and therefore difficult to meet, or simply were quoted by mistake!);

d. the sozophytisation indicator (W) indicates a low share of taxa on the national red lists (existing in Rarău Massif) of all domesticophytes of Romania (4.23), which is explained by a relatively uniform physical–geographical conditions on the one hand, and on the other part the human impact is still in early stages; consequently, this indicator shows that only minimal measures are required to be adopted in order to preserve plants in a suitable manner;

e. the conservation effectiveness indicator (E) shows if the legal measures for the conservation of the species on the red lists in a certain region are sufficient or not. The low value of this indicator for Rarău Massif (37.70) leads to the idea that legal measures that certain human activities (e.g. deforestation for Rarău region) are required in order to be restricted, particularly in those key points for biodiversity conservation.

## APPENDIX

The vascular flora of Rarău Massif (2<sup>nd</sup> part)

## BORAGINACEAE

- Anchusa officinalis* L. ssp. *officinalis*; Rarău, along the Moldova river valley; Rare, at low altitudes, along the railway embankments; H (Ht), Eur.
- A. officinalis* L. ssp. *procera* (Besser) Ciocârlan; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on ruderal places; H (Ht), Eur.
- Cerinth minor* L. ssp. *minor*; Rarău, at Cojoci, Măgura, and Runc; Very rare, at low altitudes, in meadows, as ruderal; T–H, Centr. eur.–Medit.
- Echium vulgare* L.; Rarău, at Câmpulung Moldovenesc, Izvorul Alb, Pojorâta on Eva Mt.; Sporadically, at low altitudes, on ± dry meadows and along the railway embankments; Ht, Euras.
- Cynoglossum officinale* L.; Rarău, at Pojorâta and Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; Ht, Euras. cont.
- Eritrichium nanum* (L.) Schrad. ex Gaudin ssp. *jankae* (Simonk.) Jáv.; Rarău, at “Pietrele Doamnei” rocks, “Todirescu” res., and “Piatra Zimbrului” rocks; Rare, on subalpine belt, on limestone rocks; H, Endemics into the Romanian flora.
- Lappula squarrosa* (Retz.) Dumort. (*L. echinata* Fritsch); Rarău, along the Moldova river valley; Rare, at low altitudes, along the railway embankments; T–Ht, Euras.
- Myosotis alpestris* F. W. Schmidt; Rarău, at “Pietrele Doamnei” rocks and “Todirescu” res.; Common, from low altitudes to subalpine belt, on rocky places and screes; H, Circ.–arct.–alp.
- M. arvensis* (L.) Hill (*M. intermedia* Link) ssp. *arvensis*; Rarău; Sporadically, at low altitudes, on dry meadows; Ht, Euras.
- M. decumbens* Host ssp. *variabilis* (Angelis) Grau; Rarău; Sporadically, from middle altitudes to subalpine belt, on meadows; H, Alp.–Carp.
- M. nemorosa* Besser; Rarău, at Izvorul Alb; Sporadically, on middle altitudes, on wet meadows and marshes; Ht–H, Euras.
- M. scorpioides* L. (*M. palustris* (L.) Hill); Rarău, at Izvorul Alb and Slătioara res.; Common, at low to middle altitudes, on wet places and marshes; H, Euras.
- M. stenophylla* Knaf; Rarău; meadows; H, Centr. eur. (submont.)
- M. sylvatica* Hoffm.; Rarău; Sporadically, at low altitudes, on forests; H, Eur.
- Pulmonaria filarszkyana* Jáv. (*P. rubra* Schott ssp. *filarszkyana* (Jáv.) Domin); Rarău, at Piciorul Călugărului and Câmpulung Moldovenesc; Rare, at low to middle altitudes, on forests; H, Endemics in North–east Carpathians.
- P. × landoziana* Péterfi; forests; Câmpulung Moldovenesc; H [6]
- P. montana* Lej. ssp. *porciusii* Guşul. (*P. dacica* Simonk. pro parte; *P. dacica* var. *pseudoangustifolia* Guşul.); Rarău (cited on Bodea, but not yet identified in there !); At low to middle altitudes, on forests; H, Endemics into the Romanian flora.
- P. mollissima* A. Kern. (*P. montana* Lej. ssp. *mollissima* (A. Kern.) Nyman); Rarău; Common, from low to high altitudes, on forests; H, Centr. and South–East eur.
- P. officinalis* L.; Rarău, in Slătioara res., Runc, Măgura, Câmpulung Moldovenesc, and Bodea; Sporadically, at low altitudes, on forests; H, Eur.
- P. rubra* Schott.; Rarău, incl. in Slătioara res., “Pietrele Doamnei” rocks, Runc, and Măgura; Common, from low to high altitudes, on forests; H, Carp.–Balk.
- Symphytum cordatum* Waldst. & Kit.; Rarău, incl. at Câmpulung Moldovenesc, Slătioara res., Runc, Măgura, “Pietrele Doamnei” rocks, and “Piatra Zimbrului” rocks; Common, from low to high altitudes, on forests; H, Endemics in Carp.
- S. officinale* L. ssp. *officinale*; Rarău, at Pojorâta; Rare, at low altitudes, on wet marshes, ditches, forests; H, Euras.

## VERBENACEAE

*Verbena officinalis* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; H, Cosm.

## LAMIACEAE

*Acinos alpinus* (L.) Moench ssp. *alpinus*; Rarău, incl. at “Pietrele Doamnei” rocks, Izvorul Alb, and Popii Rarăului; Common, at high altitude and subalpine belt, on limestone meadows; H, Alp.–Carp.

*A. arvensis* (Lam.) Dandy; Rarău; Sporadically, at low altitudes, along the river valleys; H, Eur.

*Ajuga pyramidalis* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, in meadows on peat soils; H, Eur.

*A. reptans* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on forests, meadows, and ruderal places; H, Eur.

*Ballota nigra* L. ssp. *nigra* (*B. ruderalis* Sw.); Rarău; Sporadically, at low altitudes, on ruderal places; H, Centr. & North–East eur.

*Clinopodium vulgare* L.; Rarău, at Pojorâta on Adam and Eva Mts.; Sporadically, at low altitudes, on forests and weeds; H, Circ.

*Dracocephalum thymiflorum* L.; Rarău, at Pojorâta [6] (not yet identified by us ! ); At low altitudes, on bushes, forest edges, and meadows; T, Eur.

*Elsholtzia ciliata* (Thunb.) Hyl.; Rarău, at Pojorâta; Rare, at low altitudes, on gardens, screes and ruderal places; T, Adv. (Asia)

*Galeopsis speciosa* Mill.; Rarău; Sporadically, from low to high altitudes, on forest clearings and along the valleys; T, Euras.

*G. tetrahit* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on forest clearings and ruderal places; T, Eur.

*Glechoma hederacea* L.; Rarău, at Câmpulung Moldovenesc and Colbul hill; Sporadically, from low to high altitudes, on shadow and wet places; H (Ch), Euras.

*Lamium album* L.; Rarău, at Pojorâta; Sporadically, from low to high altitudes, on bushes, moist and shadowed places, sometimes ruderal places; H, Euras.

*L. amplexicaule* L.; Rarău; Sporadically, at low altitudes, on gardens; T, Euras.

*L. galeobdolon* (L.) L. ssp. *galeobdolon*; Rarău, at Câmpulung Moldovenesc, Slătioara res., Runc, Măgura; Sporadically, from low to high altitudes, on forests; H (Ch), Centr. eur.

*L. maculatum* L.; Rarău, at Runc, Măgura; Sporadically, from low to high altitudes, on forests, bushes, sometimes ruderal places; H (Ch), Euras.

*Leonurus cardiaca* L. (incl. *L. quinquelobatus* Usteri) ssp. *cardiaca*; Rarău; Sporadically, at low altitudes, on ruderal places; H, Euras.

*Lycopus europaeus* L.; Rarău; Sporadically, at low altitudes, on wet places; H, Euras.

*L. exaltatus* L. fil.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on wet places; H, Euras. cont.

*Mentha longifolia* (L.) Huds. ssp. *longifolia* (L.) Huds.; Rarău; Common, from the low to the high altitudes, on wet places and marshes; H, Euras.

*M. × piperita* L.; Pojorâta; Sporadically, at low altitudes, on wet places; H

*M. × pulegium* L.; Rarău; Sporadically, at low altitudes, on wet and ruderal places; H

*M. spicata* L.; Pojorâta; Sporadically, at low altitudes, on wet and ruderal places; H, Atl.–Medit.

*M. × verticillata* L.; Valea Seacă; Rare, at low altitudes, wet places; H

*Nepeta cataria* L.; Pojorâta; Sporadically, at low altitudes, on bushes, forest clearings, meadows, and ruderal places; H, Euras. (Submedit.)

*N. nuda* L. (*N. pannonica* L.) ssp. *nuda*; Rarău, at Bodea; Sporadically, at low altitudes, on hay meadows; H, Euras. cont.

*Origanum vulgare* L. ssp. *vulgare*; Rarău, at Pojorâta (incl. on Adam and Eva Mts.); Sporadically, at low altitudes, on meadows and weeds; H, Euras.

- Prunella grandiflora* (L.) Scholler; Rarău, at Câmpulung Moldovenesc and Izvorul Alb; Common, at low altitudes, on meso-xerophyllous meadows; H, Eur.
- P. laciniata* (L.) L.; Rarău, in Slătioara res.; Sporadically, at low altitudes, on meadows and bushes; H, Centr. eur. – Medit.
- P. vulgaris* L.; Rarău, at Pojorâta on Adam Mt., Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks, Izvorul Alb; Common, at low and high altitudes, on mesophyllous meadows and wet places; H, Cosm.
- Salvia glutinosa* L.; Rarău, in Slătioara res., Runc, Măgura, Rarău, and Izvorul Alb; Common, at low altitudes, on forests; calcicolous; H, Euras. (mont.)
- S. nemorosa* L. (*S. sylvestris* auct.) ssp. *nemorosa* (*S. moldavica* Klokov); Rarău; Sporadically, at low altitudes, on ruderal places and railway embankments; H, Pont.–Medit.–Centr. eur.
- S. pratensis* L. ssp. *pratensis*; Rarău, along the Moldova river valley; Very rare, on meadows; H, Eur. (Submedit.)
- S. verticillata* L. ssp. *verticillata*; Pojorâta on Eva Mt.; Sporadically, at low altitudes, on dry meadows and calcicolous rocks; H, Centr. eur.–medit.
- Scutellaria galericulata* L.; Rarău, at Izvorul Alb; Rare, at low altitudes, on wet places; H, Circ.
- Stachys alpina* L.; Rarău, on Piciorul Scurt; Sporadically, at high altitudes and subalpine belt, on bushes, meadows, and weeds; H, Centr., West and South Eur. (mont.)
- S. germanica* L.; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on meadows and bushes; H, Pont.–Medit.
- S. officinalis* (L.) Trev.; Rarău, at Câmpulung Moldovenesc, Pojorâta, and Izvorul Alb; Sporadically, from low to high altitudes, on wet meadows; H, Euras.
- S. palustris* L.; Rarău; Sporadically, at low altitudes, along the river valleys and in other wet places; H, Circ.
- S. sylvatica* L.; Rarău; Sporadically, at low altitudes, on forests and bushes; H, Euras.
- Teucrium chamaedrys* L.; Rarău, at Câmpulung Moldovenesc, Pojorâta on Eva Mt.; Sporadically, at low altitudes, on ± dry meadows, rocks and limestone places; Ch, Centr. eur. (Submedit.)
- Thymus alpestris* Tausch ex A. Kern.; Rarău, between Colbul hill and “Pietrele Doamnei” rocks; Sporadically, in subalpine belts, on meadows; Ch, Centr. eur. (mont.)
- Th. bihoriensis* Jalas; Rarău, at “Pietrele Doamnei” rocks; Common, at high altitudes and subalpine belt, on mesophyllous and xero-mesophyllous meadows; Ch, Endemics in Romanian Carpathians.
- Th. comosus* Heuff. ex Griseb.; Rarău; Common, at high altitudes and subalpine belt, in meadows on limestone rocks; Ch, Endemics in Romanian Carpathians.
- Th. × dacicus* Borbás; Rarău, on Măgura, Obcina Flocenilor, Izvorul Alb, and Popii Rarăului; Common, from low to high altitudes, on mesophyllous and xero-mesophyllous meadows; Ch
- Th. glabrescens* Willd. ssp. *glabrescens*; Rarău, at Câmpulung Moldovenesc; Common, at low altitudes, on meadows, bushes, forest clearings, and rocks; Ch, Pont.–Centr. eur.–medit.
- Th. pannonicus* All. ssp. *pannonicus*; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on meadows, bushes, forest clearings, rocks, and ruderal places; Ch, Pont.–pan.
- Th. pulcherrimus* Schur; Rarău, in “Todiurescu” res. and “Pietrele Doamnei” rocks; Sporadically, at high altitudes and subalpine belt, on dry meadows and rocky places; Ch, Endemics in Carpathian Mts.
- Th. pulegioides* L. ssp. *pulegioides* (*Th. chamaedrys* Fr.); Rarău, at “Pietrele Doamnei” rocks and in “Todiurescu” res.; Common, from low to high altitudes, on mesophyllous and xero-mesophyllous meadows; Ch, Eur. (mont.)
- Th. pulegioides* L. ssp. *montanus* (Waldst. et Kit.) Ronniger; Rarău, at “Pietrele Doamnei” rocks and in “Todiurescu” res.; Sporadically, at high altitudes and subalpine belt, on mesophyllous and xero-mesophyllous meadows; Ch, Eur. (mont.)
- Th. × schurii* Guşul.; Rarău chalet; Rare, at high altitudes, on meadows and rocky places; Ch
- ? *Th. serpyllum* L.; Cited from Pojorâta [13] (this species must be confirmed by herbarium material in Romania’s flora, also in Rarău Massif’s flora !); Meadows, on sandy soils; Ch, Centr. and North Eur.

## CALLITRICHACEAE

*Callitriche cophocarpa* Sendtn.; Rarău; Sporadically, from low to high altitudes, on still or smoothly flowing waters; T–H (HH), Euras.

## PLANTAGINACEAE

*Plantago lanceolata* L. ssp. *lanceolata*; Rarău, incl. at Câmpulung Moldovenesc, Pojorâta, Izvorul Alb, and in “Todirescu” res.; Common, from low to high altitudes, on mesophyllous meadows; H, Euras.

*P. major* L. ssp. *major*; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, on wet meadows, ruderal places sometimes; H, Euras.

*P. media* L. ssp. *media*; Rarău, incl. at Pojorâta on Eva Mt., “Todirescu” res., and Izvorul Alb; Common at low altitudes, sporadically at high altitudes, on ± dry meadows; H, Euras.

## SCROPHULARIACEAE

*Antirrhinum majus* L.; Rarău, at Câmpulung Moldovenesc (sspont.); Rare, at low altitudes, on segetal places; H, Medit.

*Bartsia alpina* L.; Rarău; Sporadically, on subalpine belts, on ± rocky places; H, Circ.arct. – alp. – Euram.

*Microrrhinum minus* (L.) Fourr.; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on segetal and ruderal places, rocky places, railway embankments; T, Eur.

*Digitalis grandiflora* Mill.; Rarău, at Câmpulung Moldovenesc, Slătioara res., and Bodea; Commonly, from low to high altitudes, on rocky places, screes, and forest clearings; H, Centr. eur.

*Euphrasia arctica* Lange ex Rostr. ssp. *tenuis* (Brenner) Yeo (*E. suecica* Murb. et Wettst.); Rarău, in “Todirescu” res.; Sporadically, from low to high altitudes, on meadows; T, Eur.

*E. minima* Jacq. ex Lam. et DC. ssp. *minima*; Rarău; Common, at high altitudes and subalpine belts, on meadows; T, Euras.–arct.–alp.–eur.

*E. minima* Jacq. ex Lam. et DC. ssp. *tatrae* (Wettst.) Hayek; Rarău; T, Carp.–sudet.

*E. rostkoviana* Hayne ssp. *rostkoviana* (*E. officinalis* L. ssp. *pratensis* Schübler et Martens); Rarău, at Muncel, Valea Seacă, “Pietrele Doamnei” rocks, Pojorâta on Eva Mt., “Todirescu” res.; Common, from low to high altitudes, on mesophyllous meadows; T, Eur.

*E. salisburgensis* Funck; Rarău, at “Pietrele Doamnei” rocks, “Todirescu” res., between Colbul hill and “Pietrele Doamnei” rocks; Sporadically, at high altitudes and subalpine belt, in meadows on limestone rocky places; T, Alp. Eur.

*E. stricta* D. Wolff ex J. F. Lehm. ssp. *stricta*; Rarău; Sporadically, from low altitudes to subalpine belts, on meadows; T, Eur.

*Gratiola officinalis* L.; Rarău, at Izvorul Alb; Rare, at low altitudes, on wet places; H, Circ.

*Lathraea squamaria* L.; Rarău; Sporadically, at low altitudes, on forests; G, Euras.

*Linaria vulgaris* Mill.; Rarău, at Câmpulung Moldovenesc and Izvorul Alb; Sporadically, at low altitudes, on ruderal places; H, Euras.

*Melampyrum bihariense* A. Kern.; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, on clearings and forest edges; T, Dacic.

*M. saxosum* Baumg.; Rarău, at “Pietrele Doamnei” rocks; Rare, at high altitudes and subalpine belt, on limestone rocks; T, Endemics into the Carpathian Mts.

*M. sylvaticum* L.; Rarău, incl. at Izvorul Alb, “Pietrele Doamnei” rocks, Slătioara res., Colbul hill; Common, from low to high altitudes, on forests; T, Euras.

*Pedicularis exaltata* Besser (*P. transilvanica* Schur pro parte; *P. carpatica* (Andrae) Simonk. pro parte); Rarău; Sporadically, at low altitudes, on clearings and forest edges, bushes, and meadows; H, Carp.–Sarm.

*P. hacquetii* Graf; Rarău, at “Piatra Zimbrului” rocks, “Pietrele Doamnei” rocks, “Todirescu” res., Muncel; Sporadically, at high altitudes and subalpine belt, on rocky places, meadows, and wet places; H, Alp.–Carp.

- P. oederi* Vahl; Rarău; Rare, at high altitudes and subalpine belt, on rocky places and meadows; H, Euras. arct.–alp.
- P. verticillata* L.; Rarău, incl. at Hăgimiș; Very rare, in subalpine belt, on meadows; H, Circ.arct.–alp.–euram.
- Rhinanthus alecterolophus* (Scop.) Pollich (*R. major* L., nom. ambig.); Rarău; Common, in low part, on mesophyllous meadows; cited from Pojorâta, nearby the Adam Mt. [13; 4]; T, Centr. eur. / European endemics.
- Rh. alpinus* Baumg.; Rarău, at “Piatra Zimbrului” rocks and “Pietrele Doamnei” rocks; Rare, at high altitude and subalpine belt, on meadows and rocks; T, East Alps – Sudety Mts. – Carp. – Balk.
- Rh. angustifolius* C. C. Gmel. ssp. *angustifolius*; Rarău, at Câmpulung Moldovenesc, Pojorâta, and in “Todirescu” res.; Common, from low altitudes to subalpine belt, on mesophyllous meadows; T, Euras.
- Rh. minor* L.; Rarău, incl. at Izvorul Alb; Common, from the low parts to the subalpine belt, on wet meadows; T, Euras.
- Scrophularia nodosa* L.; Rarău, incl. at Câmpulung Moldovenesc; Sporadically, at low altitudes, on forests; H, Euras.
- S. scopoli* Hoppe; Rarău, at Câmpulung Moldovenesc and Pojorâta; Rare, from low altitudes to subalpine belt, on meadows and bushes; H, Pont.–Pan.–Balk.
- S. vernalis* L.; Câmpulung Moldovenesc; forests, bushes, wet places; H, Centr. eur. [6]
- Tozzia alpina* L. ssp. *carpathica* (Wol.) Dostál (*T. carpathica* Wol.); Rarău, at Popii Rarăului and Curmătura Rarăului; Very rare, on subalpine belt, on herbaceous places; H, Carp.–Balk.
- Verbascum lanatum* Schrad. (*V. alpinum* Turra pro parte); Rarău; Sporadically at low altitudes, on meadows and rocky places; H, Pont.–Balk.
- V. lychnitis* L.; Rarău; Sporadically at low altitudes, on meadows; Ht, Eur.
- V. nigrum* L. ssp. *nigrum*; Rarău, at Câmpulung Moldovenesc; Sporadically, from low to high altitudes, on forest clearings and river banks; H, Euras.
- ? *V. phlomoides* L.; Rarău, at Pojorâta ?; At low altitudes, on forest clearings, rocky places, screes, meadows, and ruderal places; Ht, Centr. and South–East eur. [13].
- Veronica anagallis-aquatica* L. ssp. *anagallis-aquatica*; Rarău; Rare, at low altitudes, on wet places; H, Circ.
- V. arvensis* L.; Rarău, at Câmpulung Moldovenesc; Very rare, at low altitudes, on ruderal and dry places; T, Euras.
- V. beccabunga* L.; Rarău, at Pojorâta, Hăgimiș, and in “Todirescu” res.; Sporadically, from low to high altitudes, on wet places and marshes; H, Euras.
- V. chamaedrys* L. ssp. *chamaedrys*; Rarău, in Slătioara res.; Sporadically, from low to high altitudes, on mesophyllous meadows and weeds; H–Ch, Euras.
- V. fruticans* Jacq. (*V. saxatilis* Scop.); Rarău; Rare, on subalpine belt, on rocks, screes, and skeletal soils; H, Euras. arct.–alp. eur.
- V. hederifolia* L. ssp. *hederifolia*; Rarău; Sporadically, at low altitudes, on ruderal places; T, Euras.
- V. longifolia* L. (*Pseudolysimachium longifolium* (L.) Opiz) ssp. *longifolia*; Rarău, at Sadova; Sporadically, at low altitudes, on wet meadows, clearings and forest edges; H, Euras. cont.
- V. montana* L.; Rarău, at Câmpulung Moldovenesc on Runc and Măgura; Sporadically, from low to high altitudes, on forests; Ch, Eur.
- V. officinalis* L.; Rarău, at Câmpulung Moldovenesc, Slătioara res., Izvorul Alb, and Bodea; Common, from low to high altitudes, on forests, forest clearings, and meadows; Ch, Euras.–North Am.
- V. persica* Poir.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on gardens and ruderal places; T, Adv. (from South–West Asia)
- V. polita* Fr. (*V. didyma* auct., vix Ten.); Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on gardens and ruderal places; T, Euras.
- V. serpyllifolia* L. ssp. *serpyllifolia*; Rarău; Common, from low to high altitudes, on mesophyllous meadows and ruderal places sometimes; H, Cosm.

- V. serpyllifolia* L. ssp. *humifusa* (Dicks.) Syme (*V. humifusa* Dicks.; *V. rotundifolia* Schrk.); Rarău, in “Todirescu” res.; Rare, at high altitudes, on mesophyllous meadows; H, Alp. Eur.
- V. spicata* L. ssp. *spicata*; Rarău, on Măgura; Sporadically, at low altitudes, in xero–mesophyllous meadows; H, Cont. euras.
- V. teucrium* L. ssp. *teucrium* (*V. pseudochamaedrys* Jacq.); Rarău, at Runc, Măgura, and Izvorul Alb; Very rare, at low altitudes, on bushes; H, Cont. euras.
- V. urticifolia* Jacq.; Rarău, Pojorâta on Eva Mts., “Pietrele Doamnei” rocks, Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks; Common, from low to high altitudes, on forests; calcicolous; H, Centr. eur.–submedit. (mont.)

#### LENTIBULARIACEAE

- Pinguicula alpina* L.; Rarău, at “Pietrele Doamnei” rocks and in “Todirescu” res.; Sporadically, at high altitudes and subalpine belt, on grassy, rocky and wet places; H, Euras. arct.–alp.
- P. vulgaris* L.; Rarău, at “Pietrele Doamnei” rocks; Sporadically, at high altitudes and subalpine belt, on grassy and wet places; H, Circ.

#### OROBANCHACEAE

- Orobanche alba* Stephan ex Willd.; Rarău, at Măgura and “Pietrele Doamnei” rocks; Rare, at middle and high altitudes, on meadows, parasite on *Thymus dactylicus*; G, Eur.
- O. flava* Mart. ex F. W. Schultz; Rarău, at Valea Seacă; Rare, at low altitudes, on meadows, parasite on *Petasites hybridus*; G, Eur. (mont.)
- O. reticulata* Wallr. ssp. *reticulata*; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on meadows, parasite on species of *Asteraceae* and *Dipsacaceae*; G, Euras.
- O. teucrii* Holandre; Rarău; Very rare, from low to high altitudes, in meadows, parasite on *Thymus pulegioides*; G, Centr. eur.

#### RUBIACEAE

- Asperula capitata* Kit. ex Schult.; Rarău; Limestone rocks; H, Carp.–Balk. [13]
- A. carpatica* Morariu (*A. cynanchica* L. var. *subalpina* Schur pro parte); Rarău, at “Pietrele Doamnei” rocks; Very rare, at high altitudes, on limestone rocks; H, Endemics in Eastern Carpathian Mts. [7]
- A. cynanchica* L.; Rarău, at “Piatra Șoimului” rocks and Câmpulung Moldovenesc; Common, especially at low altitudes, on dry meadows; H, Centr. eur.–medit.
- Cruciatia glabra* (L.) Ehrend. (*G. vernum* Scop.) ssp. *glabra*; Rarău, at Câmpulung Moldovenesc; Common, from low altitudes to subalpine belts, on xero–mesophyllous meadows; H, Euras.
- C. glabra* (L.) Ehrend. ssp. *alpina* (Schur) Simonk. (*Valantia alpina* Schur); Rarău, at Izvorul Alb, “Todirescu” res., and Muncel; Rare, in subalpine belts, on mesophyllous meadows; H, Euras.
- C. laevipes* Opiz; Rarău; Common, from low to high altitudes, on meadows, bushes, and forest edges; H, Euras.
- Galium anisophyllum* Vill.; Rarău, at “Pietrele Doamnei” rocks, “Todirescu” res., “Piatra Zimbrului” rocks, between Colbul hill and “Pietrele Doamnei” rocks; Common, at high altitudes and subalpine belts, on xerophyllous meadows and rocky places; Ch, Alp.–Eur.
- G. aparine* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on forest clearings and gardens; T, Circ.
- G. boreale* L.; Rarău; Sporadically, at low altitudes, on dry to wet meadows; H, Euras.
- G. flavescens* (Kit. ex Schult.) Borbás et Simonk.; Rarău; dry and sunny meadows, on stony places; H, Carp.–Balk.
- G. mollugo* L.; Rarău, incl. at “Pietrele Doamnei” rocks, Pojorâta on Adam and Eva Mts.; Common, from low altitudes to subalpine belt, on meadows and rocks; H, Euras.
- G. odoratum* (L.) Scop. (*Asperula odorata* L.); Rarău, incl. in Slătioara res.; Common, from low altitudes to subalpine belt, on forests; G, Euras.
- G. palustre* L. ssp. *palustre*; Rarău, in “Todirescu” res. and Bodea; Sporadically, from low to high altitudes, on marshes; H, Circ.



- G. pumilum* Murray; Rarău; Rare, at low altitudes, on forest clearings, bushes, rocks, and screes; H, Eur.  
*G. rubioides* L. ssp. *rubioides*; Rarău, at Valea Seacă; Rare, at low altitudes, on mesophyllous meadows; H, Centr. eur.  
*G. schultesii* Vest; Rarău, incl. in Slătioara res. and Izvorul Alb; Common, from low altitudes to high altitudes, on forests; H, Centr. eur.  
*G. sudeticum* Tausch (*G. anisophyllum* Vill. var. *sudeticum* (Tausch) Borza); Rarău, at Pietrele Doamne rocks; Very rare, in subalpine belt, meadows on skeletal soils, and rocks; Ch, Centr. eur.  
 ? *G. sylvaticum* L.; Cited from Rarău [13], but its presence in the Romanian flora is still doubtful (cf. Krendl, 2003 ! ) [5]; H, Centr. eur.  
*G. verum* L.; Rarău, at Câmpulung Moldovenesc, Izvorul Alb, “Todirescu” res. and Muncel; Common, from low altitudes to the subalpine belt, on meadows; H, Euras.

## CAPRIFOLIACEAE

- Lonicera nigra* L.; Rarău, incl. in Slătioara res., Izvorul Alb and Bodea; Common, from low altitudes to the subalpine belt, on forests, especially on rocky places; Ph, Centr. eur. (mont.)  
*L. xylosteum* L.; Rarău, incl. in Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks, at “Pietrele Doamnei” rocks and “Piatra Zimbrului” rocks; Sporadically, from low altitudes to the subalpine belt, on forests, especially on rocky places; Ph, Euras.  
*Sambucus ebulus* L.; Rarău, at Pojorâta; Sporadically, at the low altitudes, on ruderal places; H, Euras. (Submedit.)  
*S. nigra* L.; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, along the river valleys; Ph, Eur.  
*S. racemosa* L.; Rarău, incl. in Slătioara res., Pojorâta, Câmpulung Moldovenesc, “Pietrele Doamnei” rocks, and Izvorul Alb; Common, from low altitudes to the high altitudes, on forests and forest clearings; Ph, Circ.  
*Viburnum lantana* L.; Rarău, along the Moldova river valley and Pojorâta; Sporadically, at the low altitudes, on forest edges and bushes; Ph, Centr. eur. (Submedit.)  
*V. opulus* L.; Rarău, at Bodea and Izvorul Alb; Very rare, at low altitudes, on forest edges and bushes; Ph, Circ.

## ADOXACEAE

- Adoxa moschatellina* L.; Rarău, at Runc, Măgura, Câmpulung Moldovenesc, “Piatra Zimbrului” rocks, and “Pietrele Doamnei” rocks; Sporadically, from low to high altitudes, on forests; G, Circ.

## VALERIANACEAE

- Valeriana* × *ambigua* (Gren. & Godr.) Jáv.; Rarău; Very rare, at low altitudes; H.  
*V. montana* L.; Rarău; Sporadically, from low altitudes to high altitudes, on forests and rocky places; H, Alp.–Eur.  
*V. officinalis* L. ssp. *officinalis*; Rarău, along the Moldova river valley, in Slătioara res., Pojorâta, and Pojorâta on Eva Mt.; Sporadically, at the low altitudes, along the valleys, in bushes and on limestone rocks; H, Euras. (Submedit.)  
*V. sambucifolia* J. C. Mikan. (*V. officinalis* L. ssp. *sambucifolia* (J. C. Mikan) Čelak.); Rarău, at Izvorul Alb; Sporadically, from low to high altitudes, on forests, rocky places, and weeds; H, Eur.  
*V. simplicifolia* (Rchb.) Kabath; Rarău; Sporadically, from low to high altitudes, on marshes; meso-oligotrophic; H, Euras. cont.  
*V. tripteris* L.; Rarău, at “Pietrele Doamnei” rocks, Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks, “Piatra Zimbrului” rocks, and Izvorul Alb; Common, from low altitudes to the subalpine belt, on rocky places, shadow and wet places, along the springs and streams; H, Centr. eur.

## DIPSACACEAE

- Dipsacus pilosus* L. (*Cephalaria pilosa* (L.) Gren.); Rarău, along the Moldova river valley; Rare, at low altitudes, on river deposits; Ht, Centr. and West Eur.
- D. strigosus* Willd.; Câmpulung Moldovenesc; Bushes, forest clearings, forest edges; Ht, Pont.–centr. Asia.
- Knautia arvensis* (L.) Coulter ssp. *arvensis*; Rarău, at Bodea and Măgura; Common, from low altitudes to subalpine belt, on mesophyllous and meso-xerophyllous meadows; H, Eur.
- K. dipsacifolia* Kreutzer (*K. sylvatica* (L.) Duby.) ssp. *dipsacifolia* (*K. sendtneri* Brügger); Rarău; Rare, from low altitudes to subalpine belt, on bushes, forest edges, and ruderal places; H, Centr. eur. (mont.)
- K. longifolia* (Waldst. et Kit.) Koch; Rarău, at “Pietrele Doamnei” rocks and in Slătioara res.; Sporadically, from low altitudes to the subalpine belt, on meadows; H, Alp.–Carp.
- Scabiosa columbaria* L. (*S. banatica* Waldst. et Kit.) ssp. *columbaria*; Rarău, incl. at Câmpulung Moldovenesc, Pojorâta, and in “Todirescu” res.; Sporadically, from low altitudes to subalpine belt, on ± dry meadows; H, Eur.
- S. lucida* Vill. ssp. *barbata* Nyár.; Rarău, incl. at Izvorul Alb and “Pietrele Doamnei” rocks; Common, from low altitudes to subalpine belt, on rocky meadows; H, Endemics into the Romanian Carpathians.
- S. ochroleuca* L.; Rarău; Sporadically, at low altitudes, on ± dry meadows; Ht–H, Euras. cont.
- Succisa pratensis* Moench; Rarău; Sporadically, at low altitudes, on ± wet meadows; H, Euras.

## CAMPANULACEAE

- Campanula abietina* Griseb.; Rarău, incl. at Muncel, Slătioara res., and Pietrele Doamnei; Common, from low altitudes to subalpine belt, on forests and meadows nearby; H, Nearend. (Carp.–Balk.)
- C. patula* L.; Rarău, at Izvorul Alb and Muncel; Sporadically, at low altitudes, on mesophyllous meadows; Ht, Eur.
- C. carpatica* Jacq.; Rarău, at “Pietrele Doamnei” rocks and “Piatra Zimbrului” rocks, Pojorâta (incl. Adam and Eva Mts.), Valea Seacă, Câmpulung Moldovenesc, Izvorul Alb, and Slătioara res.; Common, from low altitudes to subalpine belt, on shady limestone rocks; T–H, Endemics in Carpathian Mts.
- C. cervicaria* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on meadows and forest clearings; Ht, Cont. euras.
- C. glomerata* L. ssp. *glomerata*; Rarău, in “Todirescu” res.; Common, from low altitudes to subalpine belt, on meadows and forest clearings; H, Euras.
- C. glomerata* L. ssp. *hispida* (Witašek) Hayek; Rarău, at Bodea; Sporadically, at low altitudes, on meadows and forest clearings; H, Balk.
- C. persicifolia* L.; Rarău, at “Pietrele Doamnei” rocks, Bodea, and Izvorul Alb; Common, from low to high altitudes, in meadows on rocky places; H, Euras.
- C. rapunculoides* L.; Rarău, in “Todirescu” res. and Bodea; Sporadically, from low to high altitudes, on meadows; H, Euras.
- ? *C. rotundifolia* L. ssp. *rotundifolia*; Rarău, at “Pietrele Doamnei” rocks ? and on Muncel ? [13]; presence of this species is doubtful for Rarău Massif !; H, Circ.
- C. rotundifolia* L. ssp. *kladniana* (Schur) Tacik (*C. kladniana* (Schur) Witašek); Rarău, at “Pietrele Doamnei” rocks; Sporadically, from high altitudes to subalpine belt, on rocks; H, Carp.–Sudety Mts.
- C. rotundifolia* L. ssp. *polymorpha* (Witašek) Tacik; Rarău, at “Pietrele Doamnei” rocks; Sporadically, from high altitudes to subalpine belt, on rocks; H, Endemics in Carpathian Mts.
- C. serrata* (Kit.) Hendrych; Rarău, incl. at “Pietrele Doamnei” rocks, Pojorâta on Adam Mt., Valea Seacă, “Todirescu” res., Valea Rea, Măgura, Preluca, Izvorul Alb, Bodea, Câmpulung Moldovenesc at „Tomnatec”; Common, from low altitudes to subalpine belt, on mesophyllous meadows; H, Eur.

- C. sibirica* L.; Rarău, at Pojorâta (incl. Adam Mt.); Sporadically, at low altitudes, on dry meadows and rocky places; H, Euras. bor. (mont.)
- C. trachelium* L.; Rarău, at Preluca; Sporadically, at low altitudes, on forest edges and in bushes; H, Euras. (Submedit.).
- Phyteuma orbiculare* L.; Rarău, incl. at Muncel, "Piatra Zimbrului" rocks, "Pietrele Doamnei" rocks, "Piatra Șoimului" rocks, and Cojoci; Common from high altitudes to subalpine belt, but sporadically at low altitudes, in meadows on limestone rocks; H, Centr. eur. (mont.)
- Ph. spicatum* L.; Rarău, in Slătioara res.; Very rare, at low altitudes, on meadows, bushes, and on forest edges; H, Eur.
- Ph. tetramerum* Schur; Rarău, at "Piatra Zimbrului" rocks and Pojorâta; Common, from low altitudes to high altitudes in mesophyllous meadows; H, Endemics in Carpathian Mts.
- Ph. vagneri* A. Kern.; Rarău, at Muncel, Pojorâta, and in Slătioara res.; Sporadically, from low to high altitudes, on meadows nearby the forests; H, Endemics in Carpathian Mts.

#### ASTERACEAE

- Achillea collina* (Rchb. fil.) Heimerl; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, on dry meadows; H, Eur. cont.
- A. distans* Waldst. et Kit. ex Willd. ssp. *distans*; Rarău, incl. at Câmpulung Moldovenesc, Pojorâta, and "Pietrele Doamnei" rocks; Sporadically, from low to high altitudes, on meadows; H, Alp.–Carp.–Balk.
- A. millefolium* L. ssp. *millefolium*; Rarău, incl. at Pojorâta, Câmpulung Moldovenesc, between Colbul hill and "Pietrele Doamnei" rocks, and Măgura; Common, from low to high altitudes, on meadows; H, Euras.
- A. millefolium* L. ssp. *sudetica* (Opiz) Oborny; Rarău, at Curmătura Rarăului; Sporadically, from high altitudes to subalpine belt, in meadows on rocky places; H, Alp.–Sudety–Carp.
- A. oxyloba* (DC.) Sch. Bip. ssp. *schurii* (Sch. Bip.) Heimerl; Rarău, at "Pietrele Doamnei" rocks; Sporadically, from high altitudes to subalpine belt, on limestone, rocky and wet places; H, Endemics in Eastern & Southern Carpathians.
- A. pannonica* Scheele; Rarău, at Câmpulung Moldovenesc, Pojorâta; Rare, at low altitudes, on dry meadows and bushes; H, Eur. cont.
- A. ptarmica* L.; Rarău, at Sadova; Rare, at low altitudes, on marshes, bushes, and forest clearings; H, Euras. (Medit.)
- A. stricta* (W. D. J. Koch) Schleich. ex Greml; Rarău, at Curmătura Rarăului and "Pietrele Doamnei" rocks; Sporadically, from high altitudes to subalpine belt, on meadows; H, Alp.–Carp.
- Adenostyles alliariae* (Gouan) A. Kern. ssp. *alliariae*; Rarău, incl. at "Pietrele Doamnei" rocks; Common, at high altitudes, on shady places, screes, forests, and weeds; H, Alp.–Eur.
- Antennaria dioica* (L.) Gaertn.; Rarău, in "Todirescu" res., "Piatra Zimbrului" rocks, Pojorâta on Eva Mt., and Izvorul Alb; Sporadically, from low altitudes to subalpine belt, in meadows on poorer, ± dry soils; Ch (H), Euras. – North Am.
- Anthemis tinctoria* L. ssp. *tinctoria*; Rarău, at Măgura, Bâta Hohenilor, and Culmea Diacul; Very rare, at low altitudes, on rocky places, screes, and in forest clearings; H, Euras. cont.
- Aposeris foetida* (L.) Less.; Rarău; Common, from low to high altitudes, on forests; H, Centr. eur.
- Arctium lappa* L.; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, on ruderal places; Ht, Euras.
- A. tomentosum* Mill.; Rarău, at Valea Seacă, Izvorul Alb, and Câmpulung Moldovenesc; Very rare, at low altitudes, on ruderal places; Ht, Euras.
- Arnica montana* L.; Rarău, incl. in "Todirescu" res., Pojorâta, Bodea, and Chiril; Sporadically, from low altitudes to subalpine belt, on mesophyllous meadows; H, Eur. (mont.)
- Artemisia absinthium* L.; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, on ruderal places; H (Ch), Euras.
- A. eriantha* Ten. (*A. petrosa* (Baumg.) Jan.); Rarău, at "Pietrele Doamnei" rocks and "Piatra Zimbrului" rocks; Very rare, on subalpine, belt, on limestone rocks; Ch, Alp.–Carp.–Balk.

- A. vulgaris* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; H, Circ.
- Aster alpinus* L.; Rarău, at “Pietrele Doamnei” rocks, Todirecu res., and Pojorâta on Eva Mt.; Sporadically, on subalpine belt, in meadows on limestone rocks; H, Circ.arct.–alp.
- Bellis perennis* L.; Rarău; Common, from low altitudes to the subalpine belt, on mesophyllous meadows; H, Eur.
- Bidens tripartita* L.; Rarău, in Slătioara village; Sporadically, at low altitudes, on wet places; T, Euras.
- Carduus acanthoides* L.; Rarău, at Valea Seacă; Sporadically, at low altitudes, on ruderal places; Ht, Eur.
- C. defloratus* L. ssp. *glauca* (Rchb. fil.) Nyman (*C. glauca* Baumg., non Cav.); Rarău, at Pojorâta on Adam and Eva Mts.; Sporadically, from low altitudes to subalpine belt, on limestone rocks and screes; H, East Alps – Carp.
- C. personata* (L.) Jacq. ssp. *personata*; Rarău; Sporadically, from low to high altitudes, on weeds, sometimes ruderal places; H, Centr. eur. (mont.)
- Carlina acaulis* L. ssp. *acaulis*; Rarău, incl. at Câmpulung Moldovenesc, Pojorâta on Adam Mt., and Popii Rarăului; Common, from low altitudes to high subalpine belt, on meadows; H, Centr. eur.–medit. (mont.)
- C. vulgaris* L.; Rarău, at Pojorâta; Rare, at low altitudes, on forest clearings, meadows, rocky slopes, and screes; Ht, Euras.
- Centaurea × austriacoides* Wol.; Rarău, at Valea Seacă, Câmpulung Moldovenesc, and Pojorâta; Rare, at low altitudes, on meadows; H.
- C. cyanus* L.; Rarău, at Pojorâta; Rare, at low altitudes, in gardens, on segetal places; Ht, Medit. (Cosm. today).
- C. × delicata* Nyár.; Rarău, at Pojorâta; Rare, at low altitudes, on meadows; H.
- C. diffusa* Lam.; Rarău, at Pojorâta and Câmpulung Moldovenesc; Sporadically, at low altitudes, along the railway embankments; T, Pont.–Balk.
- C. × erdneri* J. Wagner; Rarău, at Pojorâta and Câmpulung Moldovenesc; Sporadically, at low altitudes, on meadows; H.
- C. indurata* Janka (*C. phrygia* L. ssp. *indurata* (Janka) Stoj. et Acht.); Rarău, at Runc; Sporadically, at low altitudes, on hay meadows; H, Dacic.
- C. jacea* L.; Rarău, at Câmpulung Moldovenesc and Valea Seacă; Sporadically, at the low altitudes, on mesophyllous meadows; H, Eur.
- C. mollis* Waldst. et Kit. (*C. carpatica* Formánek) ssp. *mollis*; Rarău, at “Piatra Zimbrului” rocks and “Pietrele Doamnei” rocks, in “Todirescu” res., Curmătura Rarău; Sporadically, from high altitudes to subalpine belt, on meadows nearby the forests; H, Centr. and East eur. (mont.)
- C. mollis* Waldst. et Kit. (*C. carpatica* Formánek) ssp. *maramarosiensis* (Jáv.) Soó; Rarău, in “Todirescu” res.; Rare, at high altitudes, on meadows nearby the forests; H, Endemics in Eastern Carpathians.
- C. × nyaradyana* J. Wagner; Rarău, at Pojorâta; Sporadically, at low altitudes, on meadows; H.
- C. pannonica* (Jacq.) K. Koch; Rarău, at Câmpulung Moldovenesc; Sporadically, from low to middle altitudes, on dry meadows; Ht–H, Pont.–pan.
- C. phrygia* L. ssp. *carpatica* (Porcius) Dostál (*C. carpatica* Porcius) Porcius, non Formánek); Rarău; Sporadically, from low altitudes to high subalpine belt, on meadows; H, Endemics into the Carpathian Mts.
- C. phrygia* L. ssp. *melanocalathia* (Borbás) Dostál (*C. melanocalathia* Borbás); Rarău, at Preluca; Rare, at low altitudes, in mesophyllous meadows; H, Endemics in Carpathian Mts.
- C. phrygia* L. ssp. *phrygia*; Rarău; Common, from low altitudes to high subalpine belt, on mesophyllous or xero–mesophyllous meadows; H, Eur. (mont.).
- C. phrygia* L. ssp. *pseudophrygia* (C. A. Mey.) Gugler (*C. pseudophrygia* C. A. Mey.); Rarău, at Bodea; Sporadically, at low altitudes, on meadows; H, Centr. eur.
- C. phrygia* L. ssp. *rarauensis* (Prodan) Dostál (*C. rarauensis* Prodan); Rarău (at “Pietrele Doamnei” rocks); Very rare, at high altitudes, on meadows; H, Dacic (Endemics into the Romanian flora).

- C. pinnatifida* Schur ssp. *pinnatifida*; Rarău, at “Piatra Zimbrului” rocks and “Pietrele Doamnei” rocks, Pojorâta on Eva Mt., and “Todirescu” res.; Sporadically, from high altitudes to subalpine belt, in meadows on limestone rocks; H, Endemics into the Romanian Carpathians.
- C. × prodani* J. Wagner; Rarău, at Bodea and Izvorul Alb; Sporadically, from low to middle altitudes, on meadows; H.
- C. pugioniformis* Nyár.; Pojorâta; Meadows, forest adges; H; End. Carp.
- C. scabiosa* L.; Rarău; Sporadically, at low altitudes, on meadows; H, Eur.
- C. × semicarpatica* Prodan; Rarău, at Bodea and “Todirescu” res.; Sporadically, from low to middle altitudes, on meadows; H.
- C. × similata* Hausskn.; Rarău, at Pojorâta and Câmpulung Moldovenesc; Sporadically, at low altitudes, on meadows; H.
- C. triumfetti* All. ssp. *adscendens* (Bartl.) Dostál (*C. adscendens* (Bartl.) Prodan); Rarău, at Pojorâta on Eva Mt.; Sporadically, at middle altitudes, on meadows [13]; H, South–East of Austria to West of Bulgaria (this taxon must be confirmed by herbarium material !).
- C. triumfetti* All. ssp. *aligera* Dostál, nom. illeg. (*C. axilaris* Willd.); Rarău, at “Piatra Zimbrului” rocks and “Pietrele Doamnei” rocks, and Pojorâta on Eva Mt.; Sporadically, from high altitudes to subalpine belt, in meadows on limestone rocks; H, Centr. and South–East eur. (mont.)
- C. triumfetti* All. ssp. *stricta* (Waldst. et Kit.) Dostál (*C. stricta* Waldst. et Kit.); Rarău, incl. at Pojorâta; Sporadically, from low to middle altitudes, on meadows and grassy rocks; H, Centr. and East eur., Northern Balk.
- C. × wagneri* Gugler; Rarău, at Runc; Sporadically, at middle altitudes, on hay meadows; H.
- Chamomilla recutita* (L.) Rauschert (*Matricaria chamomilla* L.); Rarău, at Pojorâta and Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; T, Euras.
- Ch. suaveolens* (Pursh) Rydb. (*Matricaria matricarioides* (Less.) Porter); Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; T, Adv. (North–East Asia, North Amer.)
- Cicerbita alpina* (L.) Wallr.; Rarău, at Izvorul Alb and Piciorul Scurt; Sporadically, from low to high altitudes, on spruce forests and forest clearings; H, Eur. (mont.)
- Cichorium intybus* L.; Rarău, at Izvorul Alb; Sporadically, at low altitudes, on bushes, meadows and gardens; H, Euras.
- Cirsium arvense* (L.) Scop.; Rarău, at Izvorul Alb and Câmpulung Moldovenesc; Common, from low to high altitudes, on meadows, ruderal and segetal places; G, Euras.
- C. boujartii* (Piller et Mitterp.) Sch. Bip. ssp. *boujartii*; Câmpulung Moldovenesc; Ruderal meadows; Ht, Nearend. (Dacic–getic) [6].
- C. candelabrum* Griseb.; Rarău; Bushes, stony places; H, Balk. [6].
- C. decussatum* Janka; Rarău, at “Piatra Zimbrului” rocks and “Pietrele Doamnei” rocks, and in “Todirescu” res.; Common, at high altitudes, on meadows; Ht, Centr. eur. (mont.)
- C. eriophorum* (L.) Scop.; Rarău, at Câmpulung Moldovenesc; Sporadically, from low to middle altitudes, on forest edges, bushes, and meadows; Ht, Centr. eur. (mont.)
- C. erisithales* (Jacq.) Scop.; Rarău, at Pojorâta on Eva Mt. and Slătioara res.; Common, from low altitudes to the subalpine belt, on meadows, wet places, screes, and forest edges; H, Centr. eur. (mont.)
- C. heterophyllum* (L.) Hill; Rarău, at Câmpulung Moldovenesc, Pojorâta, and Izvorul Alb; Sporadically, at low altitudes, on wet places, marshes, and forest clearings; H, Euras.
- C. oleraceum* (L.) Scop.; Rarău, along the Moldova river valley; Sporadically, at low altitudes, on wet places and forest edges; H, Euras.
- C. palustre* (L.) Scop.; Rarău, at Pietrele Albe and Izvorul Alb; Common, from low to high altitudes, on marshes and forest clearings; Ht, Euras.
- C. pannonicum* (L. fil.) Link; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on meadows, forest clearings, bushes, and rocky places; H, Pont.–pan.
- C. rivulare* (Jacq.) All.; Rarău, at Bodea, Izvorul Alb, and Valea Seacă; Common, from low altitudes to the subalpine belt, on wet meadows and marshes; H, Centr. eur. (mont.)

- C. vulgare* (Savi) Ten.; Rarău; Sporadically, at low altitudes, on ruderal places and in forest clearings; Ht, Euras.
- C. waldsteinii* Rouy; Rarău, in Slătioara res. and Poiana Floce; Sporadically, from low to high altitudes, on rocky and wet places, weeds, and forests; H, Alp.–Carp.
- Conyza canadensis* (L.) Cronq.; Rarău, in Slătioara res.; Sporadically, at low altitudes, on ruderal places and gardens; T, Adv. (from North Amer.)
- Crepis biennis* L.; Rarău, incl. at Bodea, Izvorul Alb, and in Slătioara res.; Common, from low to high altitudes, on mesophyllous meadows; Ht, Eur.
- C. conyzifolia* (Gouan) A. Kern. ssp. *conyzifolia*; Rarău, at “Pietrele Doamnei” rocks; Rare, from high altitudes to subalpine belt, on forest edges and meadows; H, Alp.–eur.
- C. foetida* L. ssp. *rhoeadifolia* (M. Bieb.) Čelak (*C. rhoeadifolia* M. Bieb.); Rarău, at Măgura; Sporadically, at low altitudes, on meadows, gardens, sands, on ruderal places and fallow land; T, Pont.–medit.
- C. jacquinii* Tausch; Rarău, at “Pietrele Doamnei” rocks, Slătioara res., and “Todirescu” res.; Common, from high altitudes to subalpine belt, on limestone rocks; H, Alp.–Carp.–Balk.
- C. paludosa* (L.) Moench; Rarău; Common, from low altitudes to subalpine belt, on marshes; H, Eur. (mont.).
- C. praemorsa* (L.) Walther; Rarău; Rare, from high altitudes to the subalpine belt, on forest clearings, bushes, ruderal places and meadows; H, Euras. cont.
- Doronicum austriacum* Jacq.; Rarău, in Slătioara res.; Sporadically, from low to high altitudes, along the forest valleys and in weeds; G, Eur. (mont.).
- D. carpaticum* (Griseb. et Schenk) Nyman; Rarău, at “Pietrele Doamnei” rocks; Sporadically, from high altitudes to the subalpine belt, on rocky places and shadowed, rare forests; calcicolous; G, Alp.–eur.
- ? *D. columnae* Ten. (*D. cordatum* auct., non Lam.); cited from “Pietrele Doamnei” rocks [13], but the author himself (P. Raclaru) thinks it could be *D. carpaticum* !; From the high altitudes to the subalpine belt, on weeds, screes, rocks, nearby the springs, and on meadows; G, Alp.–eur.
- Erigeron acer* L. (*E. acris* L.) ssp. *acer*; Rarău, between “Pietrele Doamnei” rocks and Colbul hill; Sporadically, from low to high altitudes, on dry meadows and forest clearings; Ht–H, Circ.
- E. annuus* (L.) Desf. ssp. *annuus* (*Stenactis annua* (L.) Less.); Rarău; Sporadically, at low altitudes, on forest edges and along the river valleys; T, Ht, H, Adv. (from North Amer.)
- Eupatorium cannabinum* L.; Rarău; Sporadically, at low altitudes, on forest clearings and along the river valleys; H, Euras.
- Galinsoga parviflora* Cav. (*G. quinqueradiata* Ruiz et Pav.); Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; T, Adv. (from South Amer.)
- G. quadriradiata* Ruiz et Pav.; Câmpulung Moldovenesc; Sporadically, in the low altitudes, on ruderal places; T, Adv. (from South Amer.)
- Gnaphalium norvegicum* Gunnerus; Rarău, along the Limpede stream; Sporadically, from high altitudes to subalpine belt, on meadows and forest edges; H, Euras. arct.–alp. eur.
- G. sylvaticum* L.; Rarău, at “Pietrele Doamnei” rocks and in “Todirescu” res.; Sporadically, from low altitudes to subalpine belt, on bushes, forest clearings, meadows nearby the forests; H, Circ.
- Hieracium alpinum* L.; Rarău, at “Pietrele Doamnei” rocks; Sporadically, on subalpine belt, in meadows on rocky substrates and rocks; H, Circ.–arct.–alp.
- H. atratum* Fr.; Rarău; Sporadically, from the high altitudes to the subalpine belt, on slopes; H, Eur.
- H. × caesiogenum* Wolf. & Zahn; Rarău, at Deia; Sporadically, from the high altitudes to the subalpine belt, in forests, on rich soils; H.
- H. caesium* (Fr.) Fr; Rarău, at Pojorâta on Adam and Eva Mts., Izvorul Alb, and “Pietrele Doamnei” rocks; Sporadically, at medium and high altitudes, on grassy slopes and forests edges; H, Eur. (mont.)
- H. × crocatum* Fr. ssp. *conicum* (Arv.–Touv.) Murr. et Zahn; Rarău, at the homonymous hermitage; Sporadically, from low to the high altitudes, on forests clearings; H.
- H. fritzei* F. W. Schultz; Rarău; Rare, on subalpine belts, on meadows; H, Carp.–Sudety.

- H. × incisum* Hoppe; Rarău, at “Pietrele Doamnei” rocks; Sporadically, from high altitudes to subalpine belts, on rocky meadows; H.
- H. lachenalii* Suter; Rarău, at Câmpulung Moldovenesc; Sporadically, from low to high altitudes, on forest edges; H, Euras.
- H. laevigatum* Willd. ssp. *knaftii* (Čelak.) Zahn; Rarău, at Deia; Sporadically, from low to high altitudes, on meadows, forest edges and bushes; H, Euras.
- H. nigratum* R. Uechtr.; Rarău; Rare, in subalpine belts, on meadows; H, Carp.–Sudety.
- H. pietroszense* Degen & Zahn; Rarău, at “Pietrele Doamnei” rocks and “Piatra Șoimului” rocks; Rare, on subalpine belts, on rocky and grassy places; H, Endemics into the Romanian flora.
- H. pojoritense* Wolf.; Rarău, at Pojorâta on Adam and Eva Mts., Slătioara res.; Sporadically, from low to high altitudes, on limestone rocks and grassy places; H, Endemics into the Romanian flora [19].
- H. praecurrens* Vuk. ssp. *praecurrens*; Rarău, at Izvorul Alb; Sporadically, from low to high altitudes, on meadows, bushes and forests; H, Eur.
- H. praecurrens* Vuk. ssp. *pelesii* (Grecescu) Greuter; Rarău; Rare, at high altitudes, on spruce forests; H, Endemics into the Romanian flora.
- H. prenanthoides* Vill.; Rarău, incl. Pojorâta; Sporadically, from low altitudes to high altitudes, on limestones nearby the forests; H, Euras.
- H. pseudobifidum* Schur ssp. *pseudobifidum*; Rarău, at Bodea, Deia, Pojorâta on Eva Mt.; Sporadically, from high altitudes to subalpine belts, on forest edges and grassy rocks; H, Euras.
- H. transylvanicum* Heuff. (*H. rotundatum* Kit. ex Schult.); Rarău, incl. “Pietrele Doamnei” rocks, Runc, Măgura, between Colbul hill and “Pietrele Doamnei” rocks, and in Slătioara res.; Sporadically, from low to high altitudes, on forests; H, Carp.–Balk.–Centr. eur.
- H. sabaudum* L.; Rarău; Frequently, from low to high altitudes, on forest edges and bushes; H, Eur.
- H. × subpojoritense* Prodan; Rarău, Pojorâta on Eva Mt.; Sporadically, from low to middle altitudes, on forest edges; H.
- H. umbellatum* L.; Rarău, incl. Pojorâta on Adam and Eva Mts., Preluca, Câmpulung Moldovenesc, Câmpulung Moldovenesc–Tomnaticul, Pojorâta, and in “Todirescu” res.; Common, from low to high altitudes, on mesophyllous meadows; H, Circ.
- H. villosum* Jacq.; Rarău, at “Piatra Zimbrului” rocks, “Pietrele Doamnei” rocks, and “Todirescu” res.; Common, from high altitudes to the subalpine belt, in meadows on rocky places and on limestone rocks; H, Alp.–Eur.
- Homogyne alpina* (L.) Cass.; Rarău, at “Pietrele Doamnei” rocks and Slătioara res.; Common, from low altitudes to high altitudes, on meso–oligotrophic meadows; H, Alp.–Eur.
- Hypochoeris maculata* L.; Rarău; Sporadically, at low altitudes, on hay meadows; H, Euras.
- H. radicata* L.; Rarău, at Bodea and Valea Seacă; Sporadically, from low altitudes to high altitudes, on mesophyllous meadows; H, Eur.
- H. uniflora* Vill.; Rarău, incl. Pojorâta on Eva Mt., Pârâul Limpede, Preluca, and Piciorul Scurt; Common, from low to high altitudes, on mesophyllous meadows; H, Alp.–Carp.
- Inula britannica* L.; Rarău, at Câmpulung Moldovenesc on Măgura; Sporadically, at low altitudes, on dry meadows; H, Euras.
- I. helenium* L.; Rarău, at Pojorâta; Sporadically, at low altitudes, on wet meadows; H, South–East eur. and Centr.–West Asia.
- Lactuca serriola* L. (*L. scariola* L.); Rarău, in Slătioara res.; Sporadically, at low altitudes, along the roads; T–Ht, Euras.
- L. viminea* (L.) J. Presl et C. Presl; Rarău, in Slătioara res.; Sporadically, at low altitudes, on meadows, forest clearings, and in bushes; Ht, Cont. euras.
- Lapsana communis* L. ssp. *communis*; Rarău; Sporadically, at low altitudes, on forests; T–H, Euras.
- Leontodon autumnalis* L. ssp. *autumnalis*; Rarău, incl. at Câmpulung Moldovenesc and Colbul hill; Sporadically, from low to high altitudes, on mesophyllous meadows; H, Eur.
- L. autumnalis* L. ssp. *pratensis* (W. D. J. Koch) Arcang. (*L. autumnalis* L. ssp. *borealis* Ball); Rarău; Sporadically, from low to high altitudes, on mesophyllous meadows; H, Centr., East and North eur.

- L. croceus* Haenke (*Scorzoneroides crocea* (Haenke) Holub) ssp. *milaensis* (Hayek) Finch et P. D. Sell (*L. milaensis* Hayek); Rarău; Sporadically, from high altitudes to subalpine belt, in meadows on skeletal rocks; H, Carp.–Balk.
- L. hispidus* L. ssp. *hispidus*; Rarău, incl. in “Todirescu” res.; Common, from low altitudes to the subalpine belt, on mesophyllous meadows; H, Euras.
- L. hispidus* L. ssp. *danubialis* (Jacq.) Simonk. (*L. danubialis* Jacq.; *L. hastilis* L.); Rarău, incl. Bodea, Măgura, Pojorâta on Eva Mt., Runc, and Chiril; Sporadically, from low altitudes to subalpine belt, on mesophyllous meadows, forest clearings, grassy rocks and screes; H, Eur.
- Leontopodium alpinum* Cass.; Rarău, at “Pietrele Doamnei” rocks and “Piatra Zimbrului” rocks; Very rare, in the subalpine belt, on limestone rocks; Euras. alp.
- Leucanthemum vulgare* Lam. ssp. *vulgare*; Rarău, incl. “Pietrele Doamnei” rocks, Pojorâta, Valea Seacă, Izvorul Alb, Pojorâta on Eva Mt. and Măgura; Common, from low altitudes to subalpine belt, on mesophyllous meadows; H, Euras.
- L. rotundifolium* (Willd.) DC., non Opiz (*Chrysanthemum rotundifolium* Willd., *Leucanthemum waldsteinii* (Sch. Bip.) Pouzar); Rarău, incl. “Pietrele Doamnei” rocks and Slătioara res.; Common, from low to high altitudes, on forests and weeds; H, Carp.–Centr. Jugoslavie.
- Matricaria perforata* Mérat (*Tripleurospermum inodorum* (L.) Sch. Bip., *Matricaria inodora* L.); Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on forest clearings, ruderal and segetal places; T, Euras.
- Mycelis muralis* (L.) Dumort.; Rarău, incl. Slătioara res.; Common, from low to high altitudes, on forests and weeds; H, Eur.
- Onopordum acanthium* L.; Rarău, along the Moldova river valley; Very rare, at low altitudes, on ruderal places; Ht, Euras.
- Petasites albus* (L.) Gaertn.; Rarău; Sporadically, at low altitudes, along the river valleys; G, Euras.
- P. hybridus* (L.) P. Gaertn.; Rarău, incl. Slătioara res., Moldova river valley, Izvorul Alb; Common, at low altitudes, along the river valleys; G, Euras.
- P. kablikianus* Tausch ex Bercht. (*P. glabratus* (Maly) Borbás); Rarău; Sporadically, at low altitudes, along the river valleys; G, Carp.–Sudety–Balk.
- Picris hieracioides* L. ssp. *villarsii* (Jord.) Nyman (*P. crepoides* Saut., *P. sonchoides* Vest; *P. auriculata* Sch. Bip.); Rarău, incl. Izvorul Alb; Sporadically, from low to high altitudes, on meadows and forest clearings; Ht–H, Centr. and West eur.
- Pilosella aurantiaca* (L.) F. W. Schultz et Sch. Bip. ssp. *aurantiaca*; Rarău, incl. “Piatra Zimbrului” rocks, Muncel, Izvorul Alb, and “Pietrele Doamnei” rocks; Common, from low to high altitudes, on mesophyllous and meso–helophyllous meadows; H, Alp.–West Carp.
- P. brachiata* (DC.) F. W. Schultz et Sch. Bip. (*Hieracium brachiatum* DC.); Rarău; Sporadically, from low to high altitudes, on meadows; H, Eur.
- P. caespitosa* (Dumort.) P. D. Sell et C. West (*Hieracium caespitosum* Dumort. ssp. *caespitosum*); Rarău, incl. “Piatra Zimbrului” rocks, Popii Rarăului and Hăgimiș; Sporadically, from low to high altitudes, on wet meadows; H, Euras.
- P. cymosa* (L.) F. W. Schultz et Sch. Bip. (*Hieracium cymosum* L.); Rarău, incl. Pojorâta on Adam Mt., “Pietrele Doamnei” rocks, and Chiril; Sporadically, from low to high altitudes, on meadows; H, Euras. cont.
- P. floribunda* (Wimm. et Grab.) Fr. (*H. auricula* L.); Rarău, incl. on Popii Rarăului, Câmpulung Moldovenesc, and Muncel; Common, from low altitudes to the subalpine belt, on meso–xerophyllous meadows; H, Eur.
- P. × guthnickiana* (Hegetschw.) Soják (*Pilosella aurantiaca/cymosa*); Rarău; Sporadically, from low to high altitudes, on meadows; H.
- P. hoppeana* (Schult.) F. W. Schultz et Sch. Bip. (*Hieracium hoppeanum* Schult.) ssp. *macrantha* (Ten.) S. Bräut. et Greuter; Rarău; Sporadically, from low to middle altitudes, on forests and forest edges; H, Centr. and South–East. Eur. (mont.).



- P. officinarum* Vaill. (H. P. L.); Rarău, incl. in “Todirescu” res., Bodea, “Pietrele Doamnei” rocks, “Piatra Zimbrului” rocks, Câmpulung Moldovenesc (incl. on Măgura), Pojorâta (incl. on Adam and Eva Mts.); Common, from low altitudes to the subalpine belts, in meadows on poor, skeletal, ± dry soils; H, Euras.
- P. piloselloides* (Vill.) Soják (*Hieracium piloselloides* Vill.) ssp. *bauhinii* (Schult.) S. Bräut. et Greuter (*Hieracium bauhinii* Besser); Rarău, incl. Câmpulung Moldovenesc on Măgura; Sporadically, at low altitudes, on xerophyllous meadows; H, Centr. and East eur.
- P. pseudopilosella* (Ten.) Soják (*Hieracium pseudopilosella* Ten. ssp. *banaticola* Nyár. et Zahn); Rarău; Very rare, at low altitudes, on rocky and grassy places; H, Medit.–Balk.
- P. × setigera* Fr. (*P. cymosa* × *P. echioides*); Cited in doubt from Rarău Massif (due to the fact that one of the genitors, namely *P. echioides*, does not grow in here); H [13].
- Prenanthes purpurea* L.; Rarău; Sporadically, at low altitudes, on forests; G, Centr. eur. (mont.).
- Saussurea discolor* (Willd.) DC.; Rarău, at Popii Rarăului and “Todirescu” res.; Very rare, from high altitudes to subalpine belt, in meadows on limestone rocky places; H, Euras. alp.
- Scorzonera rosea* Waldst. et Kit.; Rarău, incl. at “Pietrele Doamnei” rocks; Common, from low altitudes to the subalpine belts, on mesophyllous meadows; G, Alp.–Carp.–Balk.
- Senecio abrotanifolius* L. ssp. *carpathicus* (Herbich) Nyman (*S. carpathicus* Herbich); Rarău, at “Pietrele Doamnei” rocks; Rare, mesophyllous meadows, on limestone rocks; H, Carp.–Balk.
- S. cacaliaster* Lam.; Rarău; on rocky places; H, Submedit. (mont.).
- S. doria* L. ssp. *umbrosus* (Waldst. et Kit.) Soó (*S. umbrosus* Waldst. et Kit.); Rarău, along the Bistrița river valley; Sporadically, at low altitudes, on forest edges; H, Centr. – East eur.
- S. integrifolius* (L.) Clairv. ssp. *capitatus* (Wahlenb.) Cufod. var. *leiocarpus* (K. Koch) Cufod.; Rarău, at Curmătura Rarăului and Culmea Rarăului; Very rare, on subalpine belt, on grassy rocks; H, Alp.–Carp.
- S. jacobaea* L. ssp. *jacobaea*; Rarău, at Cojoci; Sporadically, at low altitudes, on bushes; H, Euras.
- S. ovatus* (P. Gaertn. et al.) Willd. (*S. fuchsii* C. C. Gmel.); Rarău, incl. in Slătioara res. and “Piatra Zimbrului” rocks; Common, from low to high altitudes, on forests; H, Centr. eur.–submedit.
- S. nemorensis* L. ssp. *jacquinianus* (Rchb.) Čelak.; Rarău, incl. Valea Seacă; Sporadically, from low to high altitudes, in forests on shady valleys; H, Euras. (Submedit.).
- S. paludosus* L. ssp. *paludosus*; Rarău, at Sadova; Rare, at low altitudes, on marshes and riverine forests; H, Euras.
- S. papposus* (Rchb.) Less.; Rarău, at “Pietrele Doamnei” rocks, “Piatra Zimbrului” rocks, and “Todirescu” res.; Sporadically, from high altitudes to subalpine belt, on grassy rocks; H, Carp.–Balk.
- S. squalidus* L. ssp. *rupestris* (Waldst. et Kit.) Greuter (*S. rupestris* Waldst. et Kit.); Rarău, incl. Izvorul Alb and nearby of the „Alpin” hotel; Sporadically, from low altitudes to subalpine belt, on ± wet limestone screes; Ht–H, Centr. and South eur. (mont.).
- S. subalpinus* W. D. J. Koch; Rarău, incl. “Pietrele Doamnei” rocks and Pojorâta on Muncel; Sporadically, from high altitudes to subalpine belt, in meadows on rocky places, forests, and rocks; H, Alp.–Carp.–Balk.
- S. sylvaticus* L.; Rarău; Sporadically, from low altitudes to high altitudes, on forest clearings; T, Eur.
- S. viscosus* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, from low to high altitudes, on forest clearings, screes, and along the streams; T, Eur.
- S. vulgaris* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; T, Euras.
- Solidago virgaurea* L. ssp. *virgaurea*; Rarău, incl. at Pojorâta on Eva Mt., and “Todirescu” res.; Common, from low altitudes to subalpine belt, on bushes, forest clearings, and meadows on rocky places; H, Circ.
- S. virgaurea* L. ssp. *minuta* (L.) Arcang.; Rarău, at “Pietrele Doamnei” rocks; Sporadically, in subalpine belts, on grassy rocky places; H, Alp. eur.
- Sonchus asper* (L.) Hill ssp. *asper*; Rarău; Sporadically, at low altitudes, on ruderal places; T, Cosm.

- S. oleraceus* L.; Rarău, at Câmpulung Moldovenesc; Sporadically, from low to high altitudes, on ruderal places; T, Cosm.
- S. palustris* L. (*S. paluster* L.); Rarău, at Sadova; Rare, at low altitudes, on marshes, riverine forests, and bushes along the streams; G, Eur.
- Tanacetum corymbosum* (L.) Sch. Bip. ssp. *corymbosum*; Rarău, incl. Câmpulung Moldovenesc, Pojorâta on Eva Mt., in Slătioara res., Izvorul Alb, Culmea Rarău and at "Piatra Zimbrului" rocks; Common, from low altitudes to high altitudes, on meadows and weeds; H, Euras.
- T. vulgare* L.; Rarău, along the Bistrița valley, "Todirescu" res. and Popii Rarăului; Sporadically, at low altitudes, on ruderal places; H, Euras.
- Taraxacum erythrospermum* Besser; Rarău, at Câmpulung Moldovenesc; Sporadically, at low altitudes, on meadows, forests clearings, bushes and ruderal places; H, Euras. (Medit.)
- T. officinale* Weber; Rarău, on "Todirescu" res., Pojorâta, Bodea, and Izvorul Alb; Common, from low to the subalpine belt, on mesophyllous meadows; H, Euras.
- Telekia speciosa* (Schreb.) Baumg.; Rarău, incl. Câmpulung Moldovenesc, Bodea, Izvorul Alb, and in Slătioara res.; Common, at low altitudes, on forest edges, forest clearings, and river valleys; H, Carp.-Balk.-Cauc.-Anat.
- Tragopogon pratensis* L. ssp. *orientalis* (L.) Čelak.; Rarău; Common, from low altitudes to high altitudes, on mesophyllous meadows; Ht-H, Centr. – East eur.
- Tussilago farfara* L.; Rarău, incl. between Colbul hill and "Pietrele Doamnei" rocks and Izvorul Alb; Common, from low altitudes to high altitudes, along the stream valleys; G, Euras.
- Xanthium spinosum* L.; Rarău, at Câmpulung Moldovenesc and Pojorâta; Sporadically, at low altitudes, on ruderal places; T, Adv. from South Amer. (Cosm. nowadays)

#### LILIOPSIDA

##### ALISMATACEAE

- Alisma lanceolatum* With.; Rarău, Pojorâta; In streams or small ponds; Hd, Euras.
- A. plantago-aquatica* L.; Rarău, in Slătioara res. and Deia; Sporadically, at low altitudes, on wet places and marshes; Hd, Circ.

##### SCHEUCHZERIAACEAE

- Scheuchzeria palustris* L.; Cited from "Pietrele Doamnei" rocks [13] (in error, in our opinion !); From low to high altitudes, on peat bogs and oligotrophic marshes, on submerged and peaty soils; G, Circ.bor./Glacial relict into the Romanian flora.

##### JUNCAGINACEAE Rich.

- Triglochin palustris* L.; Rarău, incl. Pojorâta and Izvorul Alb; Sporadically, from low to high altitudes, on marshes; H, Circ.

#### LILIACEAE

- Allium albidum* Fisch. ex M. Bieb. ssp. *albidum* (incl. *A. flavescens* Besser); Rarău; Rare, at low altitudes, on dry places and in bushes; G, Pont.-Dacic-Balk.
- A. angulosum* L.; Rarău, at Câmpulung Moldovenesc, Pojorâta, and "Pietrele Doamnei" rocks; Sporadically, from low to high altitudes, on peat bogs and swampy meadows; G, Euras. cont.
- A. schoenoprasum* L. ssp. *sibiricum* (L.) Čelak. (*A. sibiricum* L.); Rarău, at "Pietrele Doamnei" rocks, "Piatra Zimbrului" rocks, and in "Todirescu" res.; Sporadically, from high altitudes to subalpine belt, on wet meadows and wet screes; G, Circ.-arct.-alp.
- A. senescens* L. ssp. *montanum* (F. W. Schmidt) Holub (*A. montanum* F. W. Schmidt); Rarău, at "Pietrele Doamnei" rocks, Pojorâta (incl. Adam and Eva Mts.), "Piatra Șoimului" rocks, and in "Todirescu" res.; Sporadically, from low altitudes to subalpine belt, in meadows on rocky places; calcicolous; G, Centr. eur.-submedit. (mont.).

- A. ursinum* L. ssp. *ucrainicum* Kleopow et Oxner; Rarău, incl. “Pietrele Doamnei” rocks; Common, from low to high altitudes, on forests; G, Pont.–Medit.
- A. victoralis* L.; Rarău, at “Pietrele Doamnei” rocks; Rare, from high altitudes to subalpine belt, in meadows on rocks; G, Alp. eur.
- Anthericum ramosum* L.; Rarău, in “Todirescu” res.; Sporadically, from low to high altitudes, on grassy and limestone rocky places; H, Centr. eur.
- Colchicum autumnale* L.; Rarău, incl. Pârâul Limpede, Preluca, Pojorâta, Bodea, and Izvorul Alb; Common, from low to high altitudes, on mesophyllous meadows; G, Centr. eur.
- Convallaria majalis* L.; Rarău, at Câmpulung Moldovenesc, nearby the town of; Rare, probabil escaped from cultivation (!), on forests; G, Eur.
- Gagea lutea* (L.) Ker Gawl. (*G. erubescens* Besser); Rarău; Sporadically, from low to high altitudes, on mesophyllous meadows; G, Euras.
- Lilium martagon* L.; Rarău, incl. “Piatra Zimbrului” rocks, Slătioara res., and Colbul hill; Sporadically, from low altitudes to the subalpine belt, in forests and meadows on rocky places; G, Euras.
- Lloydia serotina* (L.) Rchb.; Rarău, at “Pietrele Doamnei” rocks; Sporadically, on subalpine belt, on shady and semi-shaded rocks; G, Circ.–arct.–alp.
- Maianthemum bifolium* (L.) F. W. Schmidt; Rarău, incl. Pojorâta on Eva Mt. and in Slătioara res.; Common, at low altitudes, on forests; G, Euras.
- Muscari botryoides* (L.) Mill.; Rarău, incl. “Todirescu” res. and Câmpulung Moldovenesc; Sporadically, from low altitudes to high altitudes, on meadows nearby the forests; G, Centr. eur.–submedit.
- Paris quadrifolia* L.; Rarău, incl. Slătioara res. and Bodea; Sporadically, at low altitudes, on forests; G, Euras.
- Polygonatum multiflorum* (L.) All.; Rarău; Sporadically, at low altitudes, on forests; G, Euras.
- P. verticillatum* (L.) All.; Rarău, incl. Slătioara res., Câmpulung Moldovenesc on Runc and Măgura; Common, at low altitudes, on forests and meadows nearby; G, Euras.
- Scilla bifolia* L. ssp. *bifolia*; Rarău, incl. Câmpulung Moldovenesc on Muncel, “Todirescu” res., and Izvorul Alb; Common, from low to high altitudes, on forests and meadows nearby; G, Centr. and South eur.
- Streptopus amplexifolius* (L.) DC.; Rarău, incl. Bodea, Câmpulung Moldovenesc on Runc and Măgura; Very rare, at low altitudes, on forests; G, Circ.
- Veratrum album* L. ssp. *album*; Rarău, incl. Pojorâta and “Piatra Zimbrului” rocks; Sporadically, from low altitudes to subalpine belt, on meadows nearby the forests and in weeds; H, Euras.

#### AMARYLLIDACEAE

- Galanthus nivalis* L.; Rarău, incl. “Todirescu” res. and Câmpulung Moldovenesc on Muncel; Common, from low to high altitudes, on forests and meadows nearby of; G, Centr. eur.–submedit.

#### DIOSCOREACEAE

- Dioscorea communis* (L.) Caddick et Wilkin (*Tamus communis* L.); Rarău, at East of Câmpulung Moldovenesc; Very rare, at low altitudes, on forests and forest edges; G, Submedit.

#### IRIDACEAE

- Crocus vernus* (L.) Hill ssp. *vernus* (*C. heuffelianus* Herb.); Rarău; Common, from high altitudes to subalpine belt, on mesophyllous meadows; G, Carp.–Balk.
- Gladiolus imbricatus* L.; Rarău, at Izvorul Alb and Valea Seacă; Sporadically, at low altitudes, on wet meadows; G, Cont. euras.
- Sisyrinchium montanum* Greene (*S. angustifolium* Mill. pro parte, *S. bermudiana* sensu H. J. Coste, non L.); Rarău, at Deia; Rare, on low and middle altitudes, on mesophyllous meadows; H, Adv. (from North Amer.)

## JUNCACEAE

- Juncus articulatus* L. (*J. lampocarpus* Ehrh. ex Hoffm.); Rarău, incl. “Todirescu” res.; Common, from low to high altitudes, on wet meadows and marshes; H, Circ.
- J. bufonius* L.; Rarău; Common, at low altitudes, on wet places; T, Cosm.
- J. compressus* Jacq.; Rarău, incl. Bodea and “Todirescu” res.; Common, from low to high altitudes, on wet places and marshes; G, Euras.
- J. effusus* L.; Rarău, incl. Bodea; Common, from low altitudes to high altitudes, on wet places and marshes; H, Cosm.
- J. filiformis* L.; Rarău, at Valea Seacă; Rare, from high altitudes to subalpine belt, on swampy places; H (G), Circ.arct.–alp.
- J. inflexus* L. (*J. glaucus* Sibth.); Rarău, incl. Câmpulung Moldovenesc; Common, from low to high altitudes, on marshes; G, Euras.
- J. thomasi* Ten. (*J. rochelianus* Schult.); Rarău, along the “Caselor” and “Șandru” streams; Very rare, at low altitudes, on wet meadows; H (G), Carp.–Balk.
- J. trifidus* L.; Rarău, cited from “Pietrele Doamnei” rocks [13]; Very rare, on subalpine belt, on meadows, screes, on skeletal soils and windy places; H, Circ. arct.–alp.
- Luzula campestris* (L.) DC.; Rarău, incl. Pojorâta and Câmpulung Moldovenesc on Muncel; Common, from low altitudes to the subalpine belt, especially on mesophyllous meadows; H, Circ.
- L. luzuloides* (Lam.) Dandy et Wilmott ssp. *luzuloides*; Rarău, incl. Câmpulung Moldovenesc, Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks, Izvorul Alb; Common, from low altitudes to subalpine belt, on acidophyllous meadows and in forests; H, Centr. eur.
- L. luzulina* (Vill.) Dalla Torre et Sarnth.; Câmpulung Moldovenesc; forests; H, Centr. and South eur. (mont.) [13].
- L. pilosa* (L.) Willd.; Rarău; Sporadically, from low altitudes to high altitudes, on forests; H, Circ.
- L. sudetica* (Willd.) Schult.; Rarău, incl. “Piatra Zimbrului” rocks; Sporadically, from high altitudes to subalpine belt, on meadows and marshes edges; H, Subarct.–alp.–euras.
- L. sylvatica* (Huds.) Gaudin; Rarău, incl. Slătioara res., Câmpulung Moldovenesc on Runc and Măgura, between Colbul hill and “Pietrele Doamnei” rocks, Pojorâta; Common, from low to the high altitudes, on forests; H, Atl.–medit.–centr. eur.

## CYPERACEAE

- Blysmus compressus* (L.) Panz. ex Link; Rarău; Sporadically, from low to high altitudes, on swampy places; G, Euras.
- Carex alba* Scop.; Rarău, in Slătioara res.; Sporadically, from low to high altitudes, on forests; G, Circ.
- C. appropinquata* A. Schumach.; Rarău, incl. in “Todirescu” res.; Rare, from low to high altitudes, on swampy places; H (HH), Euras. bor./Glacial relict species into the Romanian flora.
- C. atrata* L. ssp. *atrata*; Rarău, in “Todirescu” res. and Câmpulung Moldovenesc on Muncel; Sporadically, on subalpine belt, in meadows on rocky places and rocks; H, Circ. arct. – alp.
- C. brunnescens* (Pers.) Poir.; Rarău; Very rare, on subalpine belt, in swampy meadows, on acid soils; H, Circ. arct. – alp.
- C. buekii* Wimm.; Rarău; Very rare, from low altitudes to subalpine belt, on marshes and riverine forests; G (HH), Pont.–Centr. eur.
- C. capillaris* L. ssp. *capillaris*; Rarău, at Popii Rarăului and in “Todirescu” res.; Very rare, at high altitudes, on marshes; H, Circ. arct. – alp.
- C. caryophyllea* Latourr.; Rarău; Common, at low altitudes, on xero–mesophylle meadows; G, Euras. (Submedit.).
- C. curta* Gooden. (*C. canescens* auct., non L.); Rarău, incl. at Hăgimiș; Sporadically, from low altitudes to subalpine belt, on marshes; H, Circ. bor.
- C. digitata* L.; Rarău, in Slătioara res.; Common, at low altitudes, on forests and meadows nearby of; H, Euras.
- C. divulsa* Stokes ssp. *divulsa*; Rarău; Sporadically, at low altitudes, on forests; H, Circ.
- C. distans* L.; Rarău; Sporadically, at low altitudes, on marshes; H, Euras. (Subatl. – submedit.)

- C. echinata* Murray (*C. stellulata* Gooden.); Rarău, incl. in “Todirescu” res.; Common, from low altitudes to subalpine belt, on marshes; H, Circ.
- C. flacca* Schreb.; Rarău, incl. “Piatra Zimbrului” rocks, Pietrele Albe, and Izvorul Alb; Common, from low to high altitudes, on forests and wet meadows; G, Circ.
- C. flava* L.; Rarău; Common, from low altitudes to subalpine belt, on wet meadows and swamps; H, Eur. – North Amer.
- C. fuliginosa* Schkuhr; Rarău; Rocks, meadows on shadow slopes; H, Euras.–arct.–alp. eur.
- C. hirta* L.; Rarău; Sporadically, from low to high altitudes, on marshes; G, Circ.
- C. humilis* Leyss.; Rarău (Pojorâta on Adam and Eva Mts.), and in “Todirescu” res.; Sporadically, from low to high altitudes, on dry meadows, forest clearings, bushes, and grassy rocks; H, Euras. cont.
- C. lepidocarpa* Tausch; Rarău, incl. at Izvorul Alb and Câmpulung Moldovenesc; Sporadically, from low to high altitudes, on swampy meadows and in marshes, on gleyic soils; H, Eur., Canada.
- C. limosa* L.; Rarău; Sporadically, from low to high altitudes, on acid soils; G, Circ. bor./Glacial relict species into the Romanian flora.
- C. michelii* Host; Rarău; Sporadically, at low altitudes, on dry meadows; H, Centr. eur.
- C. montana* L.; Rarău, incl. “Todirescu” res., Câmpulung Moldovenesc on Măgura, and Popii Rarăului; Common, from low altitudes to subalpine belt, on meso-xerophyllous meadows, on limestone and skeletal soils; H, Cont. euras.
- C. nigra* (L.) Reichard ssp. *nigra*; Rarău, incl. Bodea; Common at low altitudes, sporadically at high altitudes, on marshes; G, Circ.
- C. ornithopoda* Willd. ssp. *ornithopoda*; Rarău, incl. at “Pietrele Doamnei” rocks, between Colbul hill and “Pietrele Doamnei” rocks; Common, from low altitudes to subalpine belt, on dry meadows; H, Eur.
- C. otrubae* Podp.; Rarău, at Valea Seacă; Rare, at low altitudes, on wet places; H, Euras.
- C. ovalis* Good.; Rarău, incl. Obcina Flocenilor and Hăgimiș; Common, from low altitudes to high altitudes, on wet meadows and marshes; H, Circ.
- C. muricata* L. ssp. *lamprocarpa* Čelak. (*C. pairaei* F. W. Schultz); Rarău, in Slătioara res.; Rare, from low to high altitudes, on forests, forest clearings, and bushes, on skeletal soils; H, Eur.
- C. pallescens* L.; Rarău; Common, from low to high altitudes, on mesophyllous meadows; H, Circ.
- C. panicea* L.; Rarău, at Valea Seacă and Pojorâta; Common at low altitudes, but sporadically at high altitudes, on marshes; G, Circ.
- C. pendula* Huds.; Rarău, at Valea Seacă and Pojorâta; Sporadically, at low altitudes, on wet places, in forests and on forest edges; H, Subatl. – submedit.
- ? *C. pilosa* Scop.; Rarău (cited in doubt in Slătioara res. [13]); At low altitudes, on forests and forest clearings; G, Centr. eur.
- C. remota* L.; Rarău, in Slătioara res.; Sporadically at the low altitudes, in forests and forest clearings, on wet places; H, Circ.
- C. rostrata* Stokes; Rarău, at Popii Rarăului, Valea Seacă and “Todirescu” res.; Rare, from low to high altitudes, abundant on some marshes; H (HH), Circ.
- C. rupestris* (leg. M. Pușcaș, 2009); Rarău; Rare, on subalpine meadows, on skeletal soils, moderately weak acidic; calcicolous; H, Circ.– arct. – alp.
- C. sempervirens* Vill.; Rarău, in “Todirescu” res., “Pietrele Doamnei” rocks, between Colbul hill and “Pietrele Doamnei” rocks, Rarău Summit, and at “Piatra Șoimului” rocks; Frequently, on subalpine belt, in dry meadows, on skeletal soils and rocks, calcicolous; H, Alp. eur.
- C. serotina* Mérat (*C. viridula* Michx. ssp. *viridula*; *C. oederi* Retz.); Rarău, in “Todirescu” res. and Câmpulung Moldovenesc; Rare, from low altitudes to subalpine belt, on marshy meadows, screes and alluvia; H, Euras.
- C. spicata* Huds. (*C. contigua* Hoppe); Rarău, incl. Slătioara res.; Sporadically, from low to high altitudes, on forests and forests clearings; H, Circ.
- C. strigosa* Huds.; Rarău, at Câmpulung Moldovenesc; H, West and Centr. eur.; forest edges and clearings [6].

- C. sylvatica* Huds.; Rarău, incl. Slătioara res. and Izvorul Alb; Common, at low altitudes, on forests; H (HH), Circ.
- C. tomentosa* L. (*C. filiformis* auct., non L.); Rarău, incl. Chiril stream; Sporadically, from low to high altitudes, on wet meadows; G, Euras.
- C. umbrosa* Host; Rarău; Sporadically, from low altitudes to subalpine belt, on meadows, especially calcicolous; H, Centr. eur.
- C. vesicaria* L.; Rarău, on “Todirescu” Summit and Hăgimiș; Very rare, at high altitudes, on marshes; H (HH), Circ.
- Cyperus fuscus* L.; Rarău, at Pojorâta; Rare, at low altitudes, on marshes, river banks or on ruderal places; T, Euras.
- Eleocharis palustris* (L.) Roem. et Schult. ssp. *palustris*; Rarău, incl. Valea Seacă, Câmpulung Moldovenesc on Runc and Bodea hills; Common, from low to high altitudes, on marshes; G (HH), Cosm.
- Eriophorum angustifolium* Honck.; Rarău; Sporadically, from high altitudes to subalpine belt, on marshes; G (HH), Circ.
- ? *E. gracile* W. D. J. Koch ex Roth; Rarău (cited in doubt from Câmpulung Moldovenesc, at Muncel [13]); From high altitudes to subalpine belt, in marshes, on moderately acidic soils; G (HH), Eur.
- E. latifolium* Hoppe; Rarău, incl. “Todirescu” res.; Common, from low to high altitudes, on marshes; H, Circ.
- ? *E. scheuchzeri* Hoppe; Rarău (cited in doubt from “Pietrele Doamnei” rocks [13]); From high altitudes to subalpine belt, on marshes and bogs; H, Circ.–arct.–alp. eur.
- E. vaginatum* L.; Rarău, incl. “Piatra Zimbrului” rocks; Very rare, from high altitudes to subalpine belt, on some peat bogs; H, Circ.
- Scirpus sylvaticus* L.; Rarău; Common, from low to high altitudes, on marshes; G, Circ.

#### POACEAE

- Agrostis capillaris* L. ssp. *capillaris*; Rarău; Common, from low altitudes to subalpine belt, on mesophyllous and meso–helophyllous meadows; H (G), Circ.
- A. stolonifera* L. ssp. *stolonifera*; Rarău, along the Moldova river valley; Sporadically, at low altitudes, on wet alluvia; H, Circ.
- Alopecurus laguriformis* Schur; Rarău; Meadows, weeds, close to streams; H, End. Carp. [6].
- A. pratensis* L. ssp. *pratensis*; Rarău, at Valea Seacă; Rare, at low altitudes, on hay meadows; H, Euras.
- Anthoxanthum odoratum* L.; Rarău, incl. at “Pietrele Doamnei” rocks, “Todirescu” res., Bodea and Hăgimiș; Common, from low altitudes to subalpine belt, on mesophyllous and meso–helophyllous meadows; H, Euras.
- Apera spica–venti* (L.) P. Beauv ssp. *spica–venti*; Rarău, at Valea Seacă, “Caselor” stream and Bodea; Very rare, at low altitudes, on wet alluvia and ruderal places; T, Euras.
- Arrhenatherum elatius* (L.) Beauv. ex. J. et C. Presl ssp. *elatius*; Rarău; Common at low altitudes, sporadically at high altitudes, on mesophyllous meadows and along the rivers; H, Euras.
- Avenula pubescens* (Huds.) Dumort. ssp. *pubescens*; Rarău; Common, from low to high altitudes, on mesophyllous meadows; H, Euras.
- A. planiculmis* (Schrad.) W. Sauer et Cmel. ssp. *planiculmis*; Rarău, incl. on Muncel [13]; Sporadically, from low to high altitudes, on mesophyllous meadows; H, Carp.–Balk.–Sudety.
- A. praeusta* (Rchb.) Holub; Rarău; Common, from low to high altitudes, on mesophyllous meadows; H, Alp.–Carp.
- Bellardiocloa violacea* (Bellardi) Chiov. (*Poa violacea* Bellardi); Rarău; Sporadically, from high altitudes to subalpine belt, on skeletal soils and rocks; H, Alp. eur.
- Brachypodium sylvaticum* (Huds.) P. Beauv.; Rarău, Câmpulung Moldovenesc on Bodea Mt.; Rare, at low altitudes, on forests, bushes and shady places; H, Euras. (submedit.)
- Briza media* L.; Rarău; Common, from low to high altitudes, on mesophyllous and meso–helophyllous meadows; H, Euras.

- Bromus commutatus* Schrad.; Rarău; Sporadically, at low altitudes, on meadows; T–Ht, Euras. (submedit.)
- B. hordeaceus* L. (*B. mollis* L.); Rarău; Sporadically, from low to high altitudes, on meadows; T–Ht, Euras. (submedit.)
- B. inermis* Leyss.; Rarău, at Valea Seacă; Rare, on dry meadows, bushes and on ruderal places; H, Cont. euras.
- B. japonicus* Thunb.; Câmpulung Moldovenesc; Sporadically, at low altitudes, on ruderal places; T–Ht, Cont. euras.
- B. ramosus* Huds.; Rarău, at Chiril; Very rare, at low altitudes, on forest clearings; H, Centr., West and South eur.
- B. tectorum* L.; Rarău; Sporadically, at low altitudes, on ruderal places; T, Euras. cont.
- Calamagrostis arundinacea* (L.) Roth; Rarău; Common, from low to high altitudes, on forests, forest clearings, and on recently installed meadows; H, Cont. euras.
- C. pseudophragmites* (Haller fil.) Koeler; in Zugreni Gorges; Sediments along the Bistrița river; H, Euras. cont.
- Cynosurus cristatus* L.; Rarău; Common, from low to high altitudes, on mesophyllous meadows; H, Eur.
- Dactylis glomerata* L. ssp. *glomerata*; Rarău, incl. Izvorul Alb; Common, at low altitudes, on mesophyllous meadows; H, Euras.
- Danthonia decumbens* (L.) DC.; Rarău; Sporadically, at low altitudes, on mesophyllous meadows; H, Eur.
- Deschampsia cespitosa* (L.) P. Beauv. ssp. *cespitosa*; Rarău, incl. “Pietrele Doamnei” rocks, Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks and Hăgimiș; Common, from low to high altitudes, on meadows and forest clearings; H, Cosm.
- D. flexuosa* (L.) Trin.; Rarău, incl. at “Pietrele Doamnei” rocks; Common, from low to high altitudes, on mesophyllous meadows installed after deforestation, and on forests; H, Circ.
- Elymus caninus* (L.) L. ssp. *biflorus* (Brign.) A. Löve et D. Löve; Rarău; Forests; H, Euras. (Arct.–alp.–eur.) [6].
- E. repens* (L.) Gould. ssp. *repens*; Rarău, at Câmpulung Moldovenesc and Izvorul Alb; Sporadically, at low altitudes, especially on ruderal places; G, Circ.
- Festuca altissima* All. (*F. sylvatica* (Pollich) Vill., non Huds.); Rarău; Sporadically, at low altitudes, on forests; H, Eur.
- F. amethystina* L. ssp. *amethystina*; Rarău, incl. “Pietrele Doamnei” rocks; Common, from high altitudes to subalpine belt, on xerophyllous meadows; calcicolous; H, Alp. – Centr. eur.
- F. carpatica* F. Dietr.; Rarău, incl. at “Pietrele Doamnei” rocks; Rare, from high altitudes to subalpine belt, on meadows of the steep slopes; H, Endemics of the Carpathian Mts.
- F. drymeja* Mert. & K. Koch; Rarău, incl. Rarău Summit; Sporadically, from low altitudes to subalpine belt, on xero–mesophyllous meadows; H, Centr. and South–East eur.
- F. gigantea* (L.) Vill.; Rarău, at Pojorâta; Rare, at low altitudes, on forests, riverine forests, forest clearings and forest edges; H, Euras.
- F. heterophylla* Lam.; Rarău, in Slătioara res., Izvorul Alb, and Chiril stream; Rarău, at low altitudes, on forests; H, Centr. eur.–submedit.
- F. nigrescens* Lam.; Rarău, in “Todirescu” res.; Rare, at high altitudes, on meadows; H, Centr. and South–West eur. (mont.)
- F. ovina* L. (*F. vulgaris* (W. D. J. Koch) Hayek) ssp. *ovina*; Rarău; Frequently, from low to high altitudes, in meadows, on ± dry, xerophyllous and silicicolous places; H, Euras.
- F. pallens* Host ssp. *pallens* (*F. cinerea* Vill. ssp. *pallens* (Host) Stohr); Rarău, at “Pietrele Doamnei” rocks, Pojorâta (on Adam and Eva Mts.) and in “Todirescu” res.; Very rare, from high altitudes to subalpine belt, on xerophyllous meadows; H, Centr. eur. (mont.)
- F. picta* Kit.; Rarău, at “Pietrele Doamnei” rocks; Common, at high altitudes to subalpine belt, on calcicolous meadows; H, Alp.–Carp.–Balk.

- F. porcii* Hack.; Rarău (cited in here [13], maybe, in error !); At high altitudes to subalpine belt, on meadows, weeds, bushes of *Pinus mugo*; calcicolous; H, Endemics species into the Carpathian Mts.
- F. pratensis* Huds. ssp. *pratensis*; Rarău, incl. Izvorul Alb; Common, from low to high altitudes, on mesophyllous and meso–helophyllous meadows; H, Euras.
- F. pratensis* Huds. ssp. *apennina* (De Not.) Hegi; Rarău, incl. Rarău Summit; Sporadically, from low altitudes to the subalpine belt, on ± wet meadows; H, Centr. eur. (mont.)
- F. rubra* L. ssp. *rubra*; Rarău; Common, from low to high altitudes, on mesophyllous meadows, forest clearings and bushes; H, Circ.
- F. rupicola* Heuff. ssp. *rupicola*; Rarău, incl. Măgura and “Todirescu” res.; Common, at low altitudes, sporadically in subalpine belt, on xerophyllous meadows; H, Cont. euras.
- F. rupicola* Heuff. ssp. *saxatilis* (Schur) Foggi et Signorini; Rarău, at “Pietrele Doamnei” rocks and in “Todirescu” res.; Sporadically, at high altitudes and subalpine belt, on sunny meadows and grassy rocks; H, Endemics species into the Eastern and Southern Carpathian Mts.
- F. supina* Schur; Rarău, on Muncel and in “Todirescu” res.; Very rare, at high altitudes and subalpine belt, on xerophyllous meadows; H, Euras. arct.–alp.
- F. valesiaca* Schleich. ex Gaudin; Rarău, at Cămpulung Moldovenesc; Rare, at low altitudes, on xerophyllous meadows; H, Cont. euras.
- F. versicolor* Tausch ssp. *versicolor*; Rarău, at “Pietrele Doamnei” rocks and between Colbul hill and “Pietrele Doamnei” rocks; Sporadically, at high altitudes and subalpine belt, on limestone rocks; H, Carp.–Sudety.
- Glyceria plicata* (Fr.) Fr. (*G. fluitans* (L.) R. Br.) ssp. *plicata* Fr.; Rarău; Common, from the low to high altitudes, on wet places and marshes; H (HH), Circ.
- G. nemoralis* (R. Uechtr.) R. Uechtr. et Körn.; Rarău, incl. in Slătioara res.; Sporadically, from low to middle altitudes, on wet places and nearby springs, in forests; H, Centr. eur.
- Holcus lanatus* L.; Rarău; Common, at low altitudes, on ± wet meadows; H, Cosm.
- H. mollis* L.; Rarău; Rare; forest clearings, bushes, meadows; H, Eur. [6].
- Hordelymus europaeus* (L.) Harz; Rarău, incl. in Slătioara res.; Sporadically, at low altitudes, on forests; H, Centr. eur.
- Koeleria macrantha* (Ledeb.) Schult. (*K. cristata* (L.) Pers. pro parte) ssp. *macrantha*; Rarău; Rare, from low to high altitudes, on meadows and in bushes; H, Circ.
- Leersia oryzoides* (L.) Sw.; Rarău, in Slătioara res.; Rare, at the low altitudes, on stream banks; G (HH), Circ.
- Lolium perenne* L.; Rarău; Sporadically, at low altitudes, on ruderal places; H, Cosm.
- Melica ciliata* L. ssp. *ciliata*; Rarău, in Slătioara res.; Sporadically, from low to high altitudes, on limestone rocks; H, Centr. eur.–Medit.
- M. nutans* L. (*M. montana* Huds.); Rarău, in Slătioara res.; Sporadically, at low altitudes, on forests; H (G), Euras.
- M. transsilvanica* Schur; Rarău, at Pojorâta on Eva Mt.; Sporadically, at low altitudes, on xero–mesophyllous meadows, bushes and forest edges; H, Submedit.
- Milium effusum* L.; Rarău, in Slătioara res.; Sporadically, at low altitudes, on forests; H, Circ.
- Molinia caerulea* (L.) Moench ssp. *caerulea* var. *caerulea*; Rarău, in Slătioara res. at “Lătoace”; Sporadically, at low altitudes, on ± wet meadows; H, Euras.
- Nardus stricta* L.; Rarău; Sporadically, from low to high altitudes, in pastures, on acidic and poor soils; H, Euras. (Circ.)
- Phleum alpinum* L.; Rarău, incl. at “Pietrele Doamnei” rocks and “Piatra Zimbrului” rocks; Sporadically, from low altitudes to subalpine belt, on mesophyllous meadows; H, Circ.–alp.
- ? *Ph. hirsutum* Honck. (*Ph. michelii* All.); Rarău (cited from Curmătura Rarău [13], but as a doubt presence !); From low to high altitudes, on meadows and forest edges, usually on limestones; H, Alp. eur.
- Ph. phleoides* (L.) Karst. (*Ph. boehmeri* Wibel); Rarău; Sporadically, from low to high altitudes, on ± dry meadows; H, Cont. euras.



- Ph. pratense* L. ssp. *pratense*; Rarău, incl. Bodea; Common, from low to high altitudes, on mesophyllous meadows; H, Euras.
- Poa alpina* L.; Rarău, incl. “Pietrele Doamnei” rocks and “Piatra Șoimului” rocks; Common, from high altitudes to subalpine belt, in meadows on rocks; H, Circ. arct.–alp.–euram.
- P. angustifolia* L.; Rarău; Sporadically, at low altitudes, on ± dry and skeletal soils and rocks; H, Euras.
- P. annua* L.; Rarău; Common, from low altitudes to the subalpine belt, along the roads, paths and on ruderal places; T–H, Cosm.
- P. chaixii* Vill.; Rarău, incl. on Muncel Mt.; Sporadically, from low to high altitudes, on meadows and in weeds; H, Centr. eur.–submedit. (mont.)
- P. laxa* Haenke (*P. tremula* Schur; *P. × custuræ* Nyár. pro parte) ssp. *pruinosa* Nyár. (*P. nyaradyana* Nannf.); Rarău, at “Pietrele Doamnei” rocks; Rare, on subalpine belt, on skeletal soils, with snow stagnation, calcifugous; H, Endemics in Romanian Carpathians.
- P. nemoralis* L.; Rarău, incl. at Câmpulung Moldovenesc, in Slătioara res., between Colbul hill and “Pietrele Doamnei” rocks, Hăgimiș and “Piatra Zimbrului” rocks; Common, from low altitudes to subalpine belt, on forests, meadows, scree, grassy and shaded rocks; H, Circ.
- P. pratensis* L.; Rarău; Common, from low altitudes to subalpine belt, on meadows; H, Cosm.
- P. rehmannii* (Asch. et Graebn.) Wolf.; Rarău, in Slătioara res., Colbul hill, Pojorâta on Eva Mt.; Sporadically, from low to high altitudes, on rocks and forest edges, on flinty substrate; H, Dacic/Endemics in Eastern Carpathians.
- P. remota* Forsk.; Rarău, on Colbul hill; Rare, at low altitudes, on forests; H, Euras. bor.
- P. supina* Schrad. (*P. annua* L. ssp. *varia* Gaudin); Rarău, at Câmpulung Moldovenesc on Bodea; Rare, at high altitudes, on ± wet meadows; H, Alp. euras.
- P. trivialis* L.; Rarău; Common, from low altitudes to subalpine belt, on ± wet meadows; H, Euras.
- Puccinellia distans* (L.) Parl.; Rarău, at Pojorâta; Rare, at low altitudes, on wet and salinized meadows; H, Euras.
- Sesleria coerulans* Friv.; Rarău, at “Pietrele Doamnei” rocks and “Piatra Zimbrului” rocks; Frequently, from high altitudes to subalpine belt, in meadows, on skeletal and limestone soils; H, Carp.–Balk.
- S. heufleriana* Schur; Rarău; Sporadically, from low to middle altitudes, on meadows, steep slopes, forest edges, and on sandstones; H, Endemics species into the Carpathian Mts.
- Setaria pumila* (Poir.) Roem. et Schult.; Rarău; Sporadically, at low altitudes, on ruderal and segetal places; T, Cosm.
- Trisetum alpestre* (Host) P. Beauv.; Rarău, at “Pietrele Doamnei” rocks; Sporadically, on subalpine belt, on limestone rocks and on flinty places; H, Alp.–Carp.
- T. flavescens* (L.) P. Beauv. ssp. *flavescens*; Rarău; Common at low altitudes, sporadically at high altitudes, on mesophyllous meadows, along the river valleys; H, Euras. (Submedit.)
- T. macrotrichum* Hack.; Rarău, at “Pietrele Doamnei” rocks and in “Todirescu” res.; Sporadically, at high altitudes and subalpine belt, on limestone rocks, heliophyllous; H, Endemics for Carpathian Mts. (Romania, Ukraine) [6].

#### TYPHACEAE

- Typha shuttleworthii* W. D. J. Koch et Sond. (*T. latifolia* L. ssp. *shuttleworthii* (W. D. J. Koch et Sond.) Stoj. et Stef.); Rarău; Sporadically, at low and middle altitudes, on marshy places; G (HH), Eur. (mont.)

#### ORCHIDACEAE

- Anacamptis pyramidalis* (L.) Rich. (*Orchis pyramidalis* L.); Rarău; Sporadically, from low to high altitudes, on meadows and bushes; G, Centr. eur. – submedit. – atl.
- Cypripedium calceolus* L.; Rarău, in Slătioara res., Câmpulung Moldovenesc on Bodea and Măgura Mts.; Very rare, at low altitudes, on mixed forests of beech and fir; G, Euras./Protected species as a “Nature Monument” in Romania.
- Cephalanthera damasonium* (Mill.) Druce; Rarău; Sporadically, at low altitudes, on forests, forest edges and forest clearings; G, Eur.

- C. longifolia* (Huds.) Fritsch; Rarău; Sporadically, at low and middle altitudes, on forests, forest edges and bushes; G, Eur.
- C. rubra* (L.) Rich.; Rarău; Sporadically, at low altitudes, on forests; G, Eur.
- Coeloglossum viride* (L.) Hartm.; Rarău, at Pârâul Limpede, Preluca and at “Pietrele Doamnei” rocks; Frequently at high altitudes, sporadically at low altitudes, on meadows; G, Circ.
- Corallorhiza trifida* Châtel. (*C. innata* R. Br.); Rarău; Sporadically, from low to high altitudes, on forests; G, Circ. bor.
- Dactylorhiza cordigera* (Fr.) Soó (*Orchis cordigera* Fr.) ssp. *cordigera*; Rarău; Frequently, from high altitudes to the subalpine belt, on marshes; G, Carp. – Balk.
- D. incarnata* (L.) Soó ssp. *incarnata*; Rarău; Rare, at low and middle altitudes, on wet, sometimes marshy meadows; G, Euras.
- D. maculata* (L.) Soó ssp. *maculata*; Rarău, incl. Izvorul Alb and Câmpulung Moldovenesc; Sporadically, at low altitudes, on ± wet meadows, sometimes on marshes; G, Centr. – North eur.
- D. majalis* (Rchb.) P. H. Hunt et Summerh. (*Orchis majalis* Rchb.; *O. latifolia* L. pro parte; *Dactylorhiza fistulosa* (Moench) H. Baumann et Künkele); Rarău; Frequently at low altitudes, sporadically on subalpine belt, on marshes and marshy meadows; G, Centr. eur.
- Epipactis atrorubens* (Hoffm.) Besser; Rarău, incl. at Preluca, “Pietrele Doamnei” rocks and Slătioara res.; Frequently, from low to high altitudes, on forests and meadows nearby the forests; G, Euras.
- E. helleborine* (L.) Crantz; Rarău, incl. in Slătioara res.; Sporadically, at low altitudes, on forests; G, Euras.
- E. palustris* (L.) Crantz; Rarău, incl. in Slătioara res.; Sporadically, at low altitudes, on wet places; G, Euras.
- Epipogium aphyllum* Sw.; Rarău, at Câmpulung Moldovenesc on Bodea Mt.; Rare, at low altitudes, on spruce forests; G, Euras.
- Goodyera repens* (L.) R. Br.; Rarău, incl. in Slătioara res.; Sporadically, from low to high altitudes, on forests; G, Circ.
- Gymnadenia conopsea* (L.) R. Br. ssp. *conopsea*; Rarău, incl. Câmpulung Moldovenesc, Pojorâta, Izvorul Alb and on Bodea Mt.; Frequently, from low altitudes to subalpine belt, on mesophyllous meadows; G, Eur.
- G. odoratissima* (L.) Rich. (*Orchis odoratissima* L.); Rarău; Sporadically, from low to middle altitudes, on meadows, forest clearings and forest edges; G, Centr. eur.
- Hermidium monorchis* (L.) R. Br.; Rarău, at Arșița, Izvorul Alb, Bodea Mt., Preluca, Muncel, “Pietrele Doamnei” rocks, and Valea Seacă; Sporadically, from low to high altitudes, on meadows; G, Euras.
- Listera cordata* (L.) R. Br.; Rarău; Sporadically, from low to middle altitudes, on wet forests, among the mosses; G, Circ.
- L. ovata* (L.) R. Br.; Rarău, incl. at Câmpulung Moldovenesc, Preluca, Slătioara res., and Izvorul Alb; Sporadically, from low to high altitudes, on forests and meadows nearby the forests; G, Euras.
- Malaxis monophyllos* (L.) Sw. (*Microstylis monophyllos* (L.) Lindl.); Rarău, at Pojorâta (on the South part of Adam and Eva Mts.); Very rare, at low altitudes, on wet hay meadows; G, Circ.
- Neottia nidus-avis* (L.) Rich.; Rarău; Sporadically, at low altitudes, on forests; G, Euras.
- Nigritella rubra* (Wettst.) K. Richter; Rarău, on Rarău Summit; Very rare, at high altitudes and subalpine belt, on meadows; G, East alp.–Carp./Protected species as a “Nature Monument” into the Romanian flora.
- Orchis coriophora* L. ssp. *coriophora*; Rarău, incl. at Câmpulung Moldovenesc, Izvorul Alb, Preluca, Pârâul Limpede, Bodea, and Arșița; Frequently, from low to high altitudes, on mesophyllous meadows; G, Centr. eur.
- O. laxiflora* Lam. ssp. *elegans* (Heuff.) Soó (*O. elegans* Heuff.); Rarău, incl. Slătioara res.; Very rare, at low altitudes, on marshy meadows and riverine everglades; G, Pont.–pan.
- O. mascula* (L.) L. ssp. *signifera* (Vest.) Soó; Rarău, incl. in “Todirescu” res.; Sporadically, from low to high altitudes, on marshy meadows and marshes; G, Submedit.

- O. militaris* L.; Rarău, at Câmpulung Moldovenesc; Rare, at low altitudes, on meadows, forest clearings and forest edges; G, Euras.
- O. morio* L. ssp. *morio*; Rarău, incl. Câmpulung Moldovenesc; Rare, at low altitudes, on meadows, bushes and forest edges; G, Eur.
- O. tridentata* Scop. ssp. *commutata* (Tod.) Nyman; Câmpulung Moldovenesc; meadows, bushes, forest edges; G, Submedit.
- O. ustulata* L.; Rarău, incl. Preluca, Pârâul Limpede, Bodea, Arșița, and Câmpulung Moldovenesc; Frequently, from low to high altitudes, on mesophyllous meadows; G, Eur.
- Platanthera bifolia* (L.) Rich.; Rarău, incl. Preluca, Izvorul Alb, and Câmpulung Moldovenesc; Sporadically, at low altitudes, on forest clearings and meadows nearby the forests; G, Euras.
- P. chloantha* (Custer) Rchb.; Rarău, incl. Bodea, Izvorul Alb, and Câmpulung Moldovenesc; Sporadically, from low to middle altitudes, on forests, forest edges, and in bushes; G, Euras. (Submedit.)
- Pseudorchis albida* (L.) Á. Löve et D. Löve; Rarău, incl. Preluca and in “Todirescu” res.; Sporadically, from high altitudes to subalpine belt, on meadows; G, Eur. (mont.)
- Traunsteinera globosa* (L.) Rchb.; Rarău, incl. “Pietrele Doamnei” rocks and “Piatra Zimbrului” rocks; Sporadically, from low to high altitudes, on mesophyllous meadows; G, Centr. eur. (mont.).

*Authors contributions:* both authors have equal contributions in making this paper.

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