



Dryades



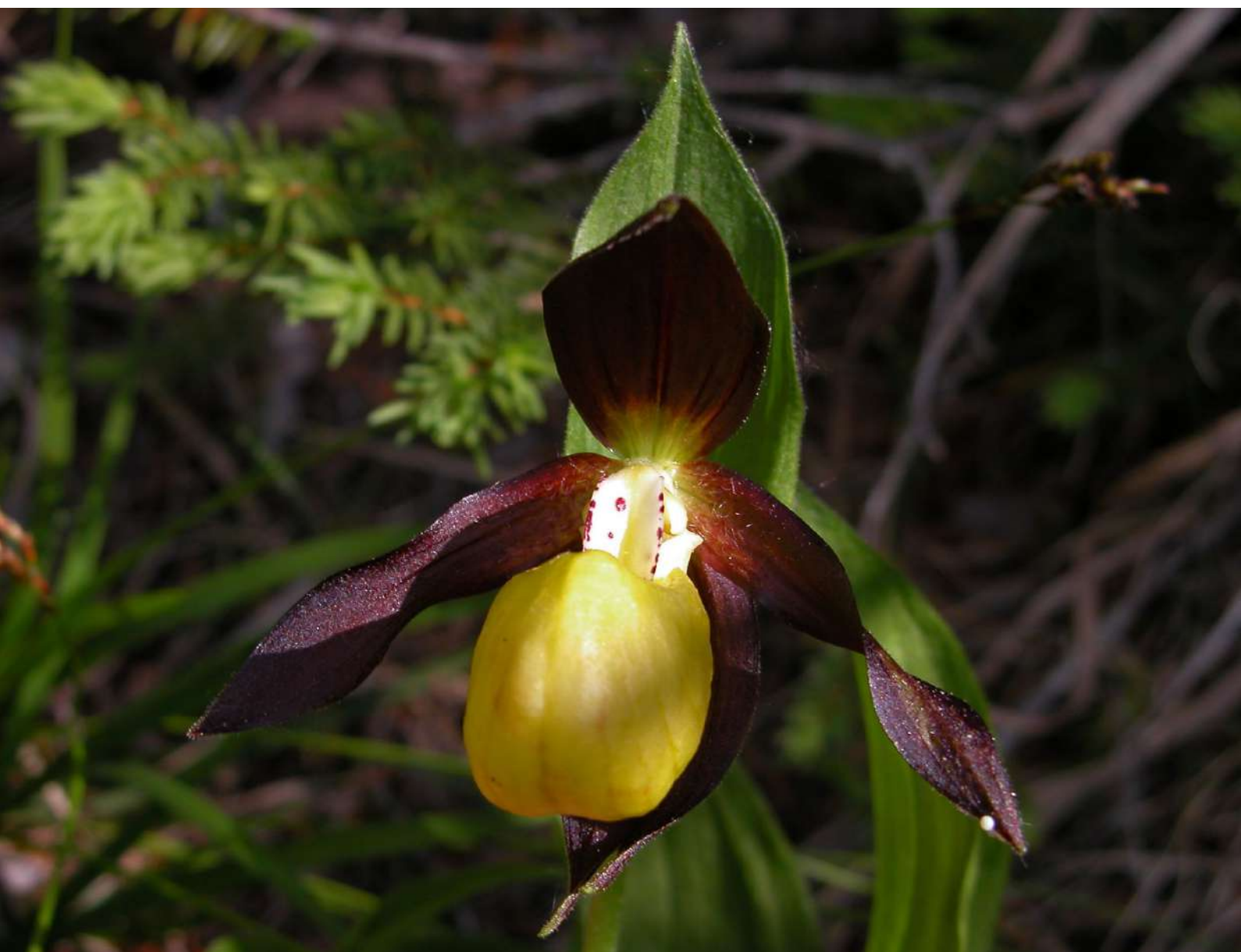
ALPSKI BOTANIČNI VRT
JULIANA

100 plants to discover in the Juliana Alpine Botanical Garden (Slovenia)

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Introduction

Juliana is the oldest natural botanical garden in Slovenia: it was founded in 1926 by the Trieste landowner Albert Bois de Chesne and currently it is managed by the Slovenian Museum of Natural History. The garden is home to some 600 different species of plants characteristic of the Alps, their fore-mountains and the Karst. Among them, endemic species known to prosper only in Slovenia can also be found.

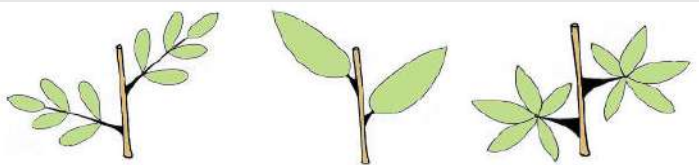
The majority of plants in the garden had to be unearthed in nature, brought here and replanted. Some of them thrive, others grow for a few years, while some do not take root at all. Each year, a few new species have to be brought to the garden, for our collection of live plants has to be repeatedly supplemented and constantly taken care of. For this reason the visitors are expected as well as kindly requested to walk through the garden only along paths, avoiding picking or even destroying the plants.

This interactive guide contains only a hundred different plants that flourish in Juliana and bloom every year. With its aid, the visitors will get acquainted with the plants and their adaptation to the mountain life, learn about many interesting features concerning the species, and gain experience for plant determination with the aid of more demanding guides in the natural environment of our Alps.

This guide was prepared in the framework of Project SiiT (School-oriented Interactive Identification Tools: exploring biodiversity in a cross-border area) within the Programme of Cross-border Cooperation Slovenia-Italy 2007-2013, which is co-financed by the European Regional Development Fund, and by national funds.

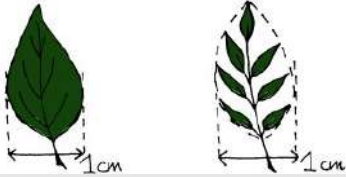
Field guide

1	Leaves arranged in whorls (at least 3 leaves start from the same point of the stem)		2
1	Leaves not arranged in whorls		5
2	Leaves (actually stems resembling leaves: cladodes) narrower than 1 mm		<i>Asparagus tenuifolius</i> Lam. – Wild Asparagus
2	Leaves wider than 1 mm		3
3	Leaves trifoliate, the margin toothed		<i>Anemonoides trifolia</i> (L.) Holub subsp. <i>trifolia</i> – Three-leaved Anemone
3	Leaves simple, the margin entire		4
4	Plant with more than 5 leaves only, > 40 cm tall. Petals pink. Fruit dry		<i>Lilium martagon</i> L. – Martagon Lily

4	Plant with 4(-5) leaves, < 40 cm tall. Petals whitish or greenish. Fruit fleshy		<i>Paris quadrifolia</i> L. – Herb Paris
5	Leaves opposite		6
5	Leaves alternate		24
6	Leaves compound or profoundly divided (at least half-way from the margin to the midrib)		7
6	Leaves simple and entire or slightly lobed		13
7	Leaves trifoliate (divided into 3 well-separated leaflets)		8
7	Leaves not trifoliate		9
8	Stems hairy. Flowers arranged in small heads		<i>Eupatorium cannabinum</i> L. subsp. <i>cannabinum</i> – Hemp-agrymony

8	Stems glabrous. Flowers not arranged in heads		<i>Valeriana tripteris</i> L. subsp. <i>austriaca</i> E. Walther – Three- leaved Valerian
9	Flowers arranged in heads. Leaves pinnate		10
9	Flowers not arranged in heads. Leaves palmate		12
10	Flowers whitish or yellowish		<i>Cephalaria leucantha</i> (L.) Roem. & Schult. – Common Pale Round-head
10	Flowers pink to purplish-violet		11
11	Corolla with 4 lobes		<i>Knautia fleischmannii</i> (Hladnik ex Rchb.) Pacher – Fleischmann's Widow Flower

11	Corolla with 5 lobes	  	<i>Scabiosa hladnikiana</i> Host – Hladnik's Scabious
12	Petals 2-lobed at the top. Leaves grey-hairy	  	<i>Geranium argenteum</i> L. – Silvery Crane's Bill
12	Petals rounded at the top. Leaves green	  	<i>Geranium macrorrhizum</i> L. – Rock Crane's-bill
13	Flowers arranged in heads	     	<i>Lomelosia graminifolia</i> (L.) Greuter & Burdet subsp. <i>graminifolia</i> – Grass-leaved Scabious
13	Flowers not arranged in heads		14
14	Flowers radially symmetrical	     	15

14	Flowers bilaterally symmetrical		19
15	Leaves wider than 1 cm. Petals fused at least at base		16
15	Leaves narrower than 1 cm. Petals free		17
16	Leaves parallel-veined. Flowers yellow		<i>Gentiana lutea</i> L. – Yellow Gentian
16	Leaves pinnately-veined. Flowers white or pink		<i>Valeriana tripteris</i> L. subsp. <i>austriaca</i> E. Walther – Three-leaved Valerian
17	Flowers small, narrower than 7 mm. Petals two-lobed		<i>Gypsophila repens</i> L. – Creeping Baby's-breath

17	Flowers large, wider than 1 cm. Petals toothed to fringed		18
18	Petals toothed		<i>Dianthus sylvestris</i> Wulfen subsp. <i>tergestinus</i> (Rchb.) Hayek – Trieste Pink Clove
18	Petals fringed		<i>Dianthus sternbergii</i> Capelli subsp. <i>sternbergii</i> – Sternberg's Pink
19	Leaf margin entire		20
19	Leaf margin toothed		21
20	Corolla violet, longer than 12 mm. Stem glabrous or hairy only on opposite faces in the upper half		<i>Satureja subspicata</i> Bartl. ex Vis. subsp. <i>liburnica</i> Šilic – Liburnian Savory

20	Corolla pink or whitish, shorter than 10 mm. Stem hairy all around in the upper half		<i>Satureja montana</i> L. subsp. <i>variegata</i> (Host) P.W. Ball – Karst Savory
21	Leaves narrower than 3 cm. Plant growing in cracks of the rocks		22
21	Leaves (at least the basal ones) wider than 3 cm. Plants not growing in cracks of the rocks		23
22	Flowers yellow		<i>Paederota lutea</i> Scop. – Yellow Veronica
22	Flowers blue		<i>Paederota bonarota</i> (L.) L. – Blue Veronica

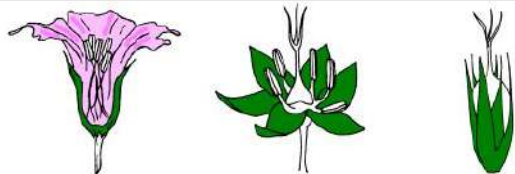
23	Flowers yellow. Stem glandular-sticky at the top		<i>Salvia glutinosa</i> L. – Sticky Clary
23	Flowers violet-blue. Stem not sticky		<i>Horminum pyrenaicum</i> L. – Dragonmouth
24	Plants with spines		25
24	Plants without spines		30
25	Flowers not arranged in heads. Leaves entire. Fruit a legume		<i>Genista sylvestris</i> Scop. – Dalmatian Broom
25	Flowers arranged in heads. Leaves (at least some of them) deeply lobed. Fruit not a legume		26
26	Heads surrounded by radiating spiny bracts		27

26	Heads without radiating spiny bracts		28
27	Heads surrounded by 3-8 bracts. Basal leaves deeply lobed		<i>Eryngium amethystinum</i> L. – Amethyst Eryngo
27	Heads surrounded by at least 12 bracts. Basal leaves entire		<i>Eryngium alpinum</i> L. – Alpine Eryngo
28	Flowers yellow. Leaves green on both sides		<i>Cirsium erisithales</i> (Jacq.) Scop. – Yellow Melancholy Thistle
28	Flowers blue. Leaves grey-hairy on the lower side		29
29	Most leaves with a central (undivided) portion which is up to 8 mm wide. Heads up to 18 mm across		<i>Echinops ritro</i> L. subsp. <i>ruthenicus</i> (M. Bieb.) Nyman – Southern Globethistle

29	Most leaves with a central (undivided) portion which is more than 10 mm wide. Heads more than 18 mm across		<i>Echinops exaltatus</i> Schr. – Tall Globethistle
30	Leaves compound or deeply lobed (at least 1/2 way to the midrib)		31
30	Leaves entire or weakly lobed		59
31	Leaves trifoliate (divided into 3 well-separated leaflets)		32
31	Leaves not trifoliate		35
32	Flowers bilaterally symmetrical. Fruit a legume		33
32	Flowers radially symmetrical. Fruit not a legume		34
33	Flowers pink. Margin of leaflets entire		<i>Cytisus purpureus</i> Scop. – Scarlet Dwarf Broom

33	Flowers yellow. Margin of leaflets toothed		<i>Medicago pironae</i> Vis. – Pirona's Medick
34	Leaflets not heart-shaped. Flowers white		<i>Anemonoides trifolia</i> (L.) Holub subsp. <i>trifolia</i> – Three- leaved Anemone
34	Leaflets heart-shaped. Flowers not white		<i>Epimedium alpinum</i> L. – Barren-wort
35	Leaves palmate		36
35	Leaves pinnate		42

36	Flowers arranged in small umbels surrounded by bracts		<i>Astrantia major</i> L. – Great Masterwort
36	Flowers not arranged in small umbels surrounded by bracts		37
37	Flowers blue, bilaterally symmetrical		<i>Aconitum angustifolium</i> Rchb. – Narrow-leaved Monkshood
37	Flowers not blue, radially symmetrical		38
38	Petals 4		<i>Potentilla erecta</i> (L.) Raeusch. – Common Tormentil
38	Petals at least 5		39

39	Flowers yellow, with more than 5 petals. Calyx absent		<i>Trollius europaeus</i> L. subsp. <i>europaeus</i> – Globeflower
39	Flowers not yellow, with 5 petals. Calyx present		40
40	Flower white		<i>Ranunculus seguieri</i> Vill. subsp. <i>seguieri</i> – Seguier's Buttercup
40	Flowers pink		41
41	Petals rounded at the top. Leaves green		<i>Geranium macrorrhizum</i> L. – Rock Crane's-bill

41	Petals 2-lobed at the top. Leaves grey-hairy		<i>Geranium argenteum</i> L. – Silvery Crane's Bill
42	Flowers in heads		43
42	Flowers not in heads		45
43	Flowers purple		<i>Centaurea scabiosa</i> L. subsp. <i>scabiosa</i> – Greater Knapweed
43	Flowers yellow or orange		44
44	Heads with both tubular and strap-shaped flowers		<i>Jacobaea abrotanifolia</i> (L.) Moench subsp. <i>abrotanifolia</i> – Orange-flowered Groundsel

44	Heads with tubular flowers only		<i>Rhaponticoides alpina</i> (L.) M.V. Agab. & Greuter – Alpine Knapweed
45	Inflorescence a compound umbel		46
45	Inflorescence not a compound umbel		48
46	Leaves 1-pinnate		<i>Hladnikia pastinacifolia</i> Rchb. – Hladnikia
46	Leaves 2-4-pinnate		47
47	Umbels with 24-35 rays. Bracts of the involucre pinnate		<i>Molopospermum peloponnesiacum</i> (L.) W.D.J. Koch subsp. <i>bauhinii</i> I. Ullmann – Striped Hemlock

47	Umbels with 13-21 rays. Bracts of the involucre entire		<i>Grafia golaka</i> (Hacq.) Rchb. – Grafia
48	Leaves with a very strong smell when bruised		<i>Dictamnus albus</i> L. – Burning Bush
48	Leaves odourless		49
49	Flowers bilaterally symmetrical. Leaves not ending with a terminal leaflet (paripinnate)		50
49	Flowers radially symmetrical. Leaves ending with a terminal leaflet (imparipinnate)		51
50	Leaflets more than 10 times as long as wide		<i>Lathyrus pannonicus</i> (Jacq.) Garcke subsp. <i>varius</i> (Hill) P.W. Ball – Variegated Pea

50	Leaflets up to 3 times as long as wide		<i>Vicia oroboides</i> Wulfen – Broad-leaved Vetch
51	Corolla with hooked spurs		52
51	Corolla without hooked spurs		53
52	Stem 2-4 mm wide at the base. Basal leaves with a sheath of 4-8 x 8-15 mm		<i>Aquilegia nigricans</i> Baumg. – Granny's Bonnet
52	Fusto alla base largo 1-2 mm. Rizoma largo 2-3 mm. Foglia inferiore del fusto con guaina di ca. 2 x 4 mm		<i>Aquilegia bertolonii</i> Schott – Bertoloni Columbine
53	Petals 4		54
53	Petals at least 5		57

54	Leaflets heart-shaped, wider than 2 cm. Flowers <1 cm across		<i>Epimedium alpinum</i> L. – Barren-wort
54	Leaves lobed, lobes < 1 cm wide. Flowers >1 cm across		55
55	Flowers white		<i>Papaver alpinum</i> L. subsp. <i>ernesti-mayeri</i> Markgr. – Julian Alpine
55	Flowers yellow		56
56	Leaf segments (lobes) 1-6 mm wide, blunt. Basal segments of the leaves entire or slightly lobed		<i>Papaver alpinum</i> L. subsp. <i>rhaeticum</i> (Leresche) Markgr. – Rhaetian Alpine Poppy
56	Leaf lobes 0.5 – 1.5 mm wide, acute. All basal segments of the leaves lobed to 2-3 segments of second order		<i>Papaver alpinum</i> L. subsp. <i>kernerii</i> (Hayek) Fedde – Kerner-Alpine Poppy

57	Plant up to 40 cm tall		<i>Pulsatilla alpina</i> (L.) Delarbrea subsp. <i>alpina</i> – Alpine Pasque Flower
57	Plant more than 40 cm tall		58
58	Flowers pink, > 4 cm across		<i>Paeonia officinalis</i> L. subsp. <i>officinalis</i> – Common Peony
58	Flowers white, < 1 cm across		<i>Aruncus dioicus</i> (Walter) Fernald – Buck's Beard
59	Flowers without petals		<i>Euphorbia</i> <i>amygdaloides</i> L. subsp. <i>amygdaloides</i> – Wood Spurge
59	Flowers with petals		60

60	Petals fused both at the base and at the apex		<i>Physoplexis comosa</i> (L.) Schur – Tufted horned Rampion
60	Petals different		61
61	Flowers arranged in heads with an involucre of bracts		62
61	Flowers not arranged in heads with an involucre of bracts		73
62	Stems woody and creeping		<i>Globularia cordifolia</i> L. – Heart-leaved Globe Daisy
62	Stems herbaceous and erect		63
63	Plant grey-hairy. Heads surrounded by radiating bracts		<i>Leontopodium nivale</i> (Ten.) Hand.-Mazz. subsp. <i>alpinum</i> (Cass.) Greuter – Edelweiss
63	Plants with other features		64

64	At least some flowers not yellow		65
64	All flowers yellow		68
65	All flowers blue or purple		<i>Cyanus triumfetti</i> (All.) Dostál ex Á. Löve & D. Löve – Trionfetti's Knapweed
65	Central flowers yellow		66
66	Ray flowers white or whitish pink		<i>Bellidiastrum michelii</i> Cass. – Daisy star
66	Ray flowers violet		67
67	Stem branched. Heads not solitary		<i>Aster amellus</i> L. – Italian Aster

67	Stem not branched. Heads solitary		<i>Aster alpinus</i> L. subsp. <i>alpinus</i> – Alpine Aster
68	All flowers tubular (no ray flowers)		<i>Galatella linosyris</i> (L.) Rchb.f. subsp. <i>linosyris</i> – Goldilocks Aster
68	Ray flowers present		69
69	Basal leaves well developed, heart- shaped, > 25 cm long		<i>Telekia speciosa</i> (Schreb.) Baumg. – Great Yellow Ox-eye
69	Basal leaves not present or not heart- shaped, < 10 cm long		70

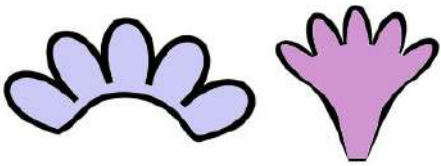
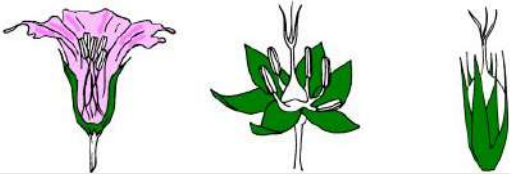
70	Leaves more than 12 times as long as wide (3-6 x 40-100 mm)	  	<i>Inula ensifolia</i> L. – Sword-leaved Inula
70	Leaves less than 10 times as long as wide		71
71	At least 5 heads on stem	   	<i>Inula spiraeifolia</i> L. – Spiraea-leaved Inula
71	Less than 5 heads on stem		72
72	Leaves embracing the stem with the base	  	<i>Inula hirta</i> L. – Downy Elecampane
72	Leaves not embracing the stem with the base	  	<i>Bupthalmum salicifolium</i> L. subsp. <i>salicifolium</i> – Yellow Oxeye

73	Leaves heart-shaped at base		74
73	Leaves not heart-shaped at base		76
74	Leaf margin entire. Flowers white		<i>Parnassia palustris</i> L. subsp. <i>palustris</i> – Grass of Parnassus
74	Leaf margin clearly toothed. Flowers not white		75
75	Flowers yellow		<i>Caltha palustris</i> L. – Kingcup (Marsh Marigold)
75	Flowers purple		<i>Cyclamen</i> <i>purpurascens</i> Mill. subsp. <i>purpurascens</i> – Purple Cyclamen
76	Plant smelling like garlic		77

76	Plant not smelling like garlic		78
77	Flowers pink		<i>Allium lusitanicum</i> Lam. – German Garlic
77	Flowers yellowish		<i>Allium ericetorum</i> Thore – Yellow Wild Garlic
78	Flowers bilaterally symmetrical		79
78	Flowers radially symmetrical		82
79	All petals yellow. Fruit a legume		<i>Genista sericea</i> Wulfen – Silky Broom
79	At least some petals not yellow. Fruit a capsule		80

80	Corolla spurred		<i>Dactylorhiza maculata</i> (L.) Soó subsp. <i>maculata</i> – Heath Spotted Orchid
80	Corolla without a spur		81
81	Corolla entirely purple		<i>Epipactis atrorubens</i> (Hoffm. ex Bernh.) Besser – Dark red Helleborine
81	Labellum (the lower petal) yellow		<i>Cypripedium calceolus</i> L. – Lady's Slipper
82	Small shrubs with woody stems (at least at the base)		83
82	Herbaceous plants		86
83	Leaves at least 5 times as long as wide		<i>Daphne cneorum</i> L. – Garland Flower

83	Leaves up to 5 times as long as wide			84
84	Leaves deciduous. Flowers yellow		<i>Rhododendron luteum</i> Sweet – Common (Yellow) Azalea	
84	Leaves leathery, evergreen. Flowers not yellow		85	
85	Leaf-margin hairy. Petals 5, pink. Fruit dry		<i>Rhododendron hirsutum</i> L. – Hairy Alpenrose	
85	Leaf-margin hairless. Petals 4, white. Fruit fleshy		<i>Daphne blagayana</i> Freyer – Blagay's Daphne	
86	Leaves (actually stems resembling leaves: cladodes) < 1 mm wide		<i>Asparagus tenuifolius</i> Lam. – Wild Asparagus	

86	Leaves > 1 mm wide		87
87	Petals fused at least at base		88
87	Petals free		96
88	Calyx present, petals 5		90
88	Calyx absent, petals 6		89
89	Flower white, < 1 cm across		<i>Convallaria majalis</i> L. – Lily of the Valley
89	Flowers yellow, more than 3 cm across		<i>Hemerocallis lilioasphodelus</i> L. – Lemon (Yellow) Day-lily
90	Inflorescences umbrella-like		91
90	Inflorescences not umbrella-like		93

91	Flowers yellow		<i>Primula auricula</i> L. – Bear's Ear
91	Flowers pink or violet		92
92	Leaves with dense small white scales beneath		<i>Primula farinosa</i> L. – Bird's-eye Primrose
92	Leaves green beneath		<i>Primula carniolica</i> Jacq. – Carniolan Primrose
93	Leaves at least 10 times as long as wide, all of them at the base of the stem		<i>Armeria alpina</i> Willd. – Alpine Thrift

93	Leaves < 10 times as long as wide, present also along the stem		94
94	Flowers yellowish or pink. Fruit fleshy		<i>Scopolia carniolica</i> Jacq. – Nightshade- leaved Henbane or Henbane Bell
94	Flowers blue. Fruit dry		95
95	Leaves < 1.5 cm wide. Plant < 40 cm tall. Stigmas 3 (lens!)		<i>Campanula cespitosa</i> Scop. – Tufted Harebell
95	Leaves more than 1.5 cm wide. Plant > 40 cm tall. Stigmas 5		<i>Adenophora liliifolia</i> (L.) A. DC. – Lilyleaf Ladybells
96	Leaf-margin with calcareous encrustations. Leaves arranged in a dense basal rosette		97

96	Leaf-margin without such encrustations. Leaves not arranged in a dense basal rosette		98
97	Lower branches of inflorescence with at least 4 flowers. Sepals 2 times as long as wide		<i>Saxifraga hostii</i> Tausch subsp. <i>hostii</i> – Host’s Saxifrage
97	Lower branches of inflorescence with 1-3 flowers. Sepals almost as long as wide		<i>Saxifraga crustata</i> Vest – Encrusted Saxifrage
98	Leaves fleshy. Leaf-margin toothed		<i>Rhodiola rosea</i> L. – Roseroot
98	Leaves not fleshy. Leaf-margin entire		99
99	Flowers orange		100
99	Flowers not orange		101

100	Petals not curved back		<i>Lilium bulbiferum</i> L. subsp. <i>bulbiferum</i> – Fire Lily or Orange Lily
100	Petals curved back		<i>Lilium carniolicum</i> Bernh. ex W.D.J. Koch – Carniolan Lily or Golden Apple
101	Leaves > 6 cm wide		102
101	Leaves < 6 cm wide		103
102	Flowers green		<i>Veratrum lobelianum</i> Bernh. – Lobel's False Hellebore

102	Flowers dark coloured		<i>Veratrum nigrum</i> L. – Black False Hellebore
103	Flowers blue-violet. 3 petals longer than others		104
103	Flowers white. Petals of equal length		106
104	Upper side of outer petals with hairs in the middle		<i>Iris cengialti</i> Ambrosi ex A. Kern. – Southern Alpine Iris
104	Outer petals hairless		105
105	Basal leaves shorter than the flower-bearing stems. Spathe white-membranous at the edge		<i>Iris sibirica</i> L. – Siberian Iris

105	Basal leaves longer than the flower-bearing stems. Spathe green	 	<i>Iris graminea</i> L. – Grass Iris
106	Flowers arranged in racemes	    	<i>Anthericum ramosum</i> L. – Branched St. Bernard's Lily
106	Flowers solitary	     	<i>Narcissus radiiflorus</i> Salisb. – Mountain Narcissus

Notes to the species

Aconitum angustifolium Rchb. – Narrow-leaved Monkshood

Slovenia hosts eight monkshood species with either blue or yellow flowers. The shape of the corolla reminds us of a helmet.

Our most remarkable species is the endemic narrow-leaved monkshood. It grows in rocky damp grasslands, between tall herbs, in pastures around pens, on screes and along streams in the montane and subalpine belts of the mountains of Bohinj and Krn, Breginjski kot and Mt Sabotin above Nova Gorica. One of its sites is also in the Friuli region across the Slovenian-Italian border.

The typical site (i.e. that from which the species was originally described) is along Lake Bohinj, where the species was discovered in the early 19th century by the Erfurt botanist J. J. Bernhardt.



Adenophora liliifolia (L.) A. DC. – Lilyleaf Ladybells

This plant is a 30-100 cm tall perennial herb with simple leaves. The nodding, violet and pleasantly scented bell-shaped flowers are grouped in racemes. The pistil's neck is much longer than the corolla and well protruding from it; at the bottom, it is surrounded by a tubular annulus, which differentiates this genus from *Campanula*.

The lilyleaf ladybells' generic name originates from the Greek *aden* (gland) and 'pherein' (to bring, to bear), because the margins of leaves and sepals are covered by glandular hairs. The pistil's neck originates at the bottom of the corolla, surrounded by an annulus on which nectary glands are located.

In Slovenia, this species grows in damp grasslands, amongst shrubs, in forests and on forest edges in the Kolpa River valley and in the Zasavje region in the vicinity of Hrastnik and Zidani Most. The general distribution is eurasian, extending to eastern and central Europe, the Caucasus and Siberia.

The lilyleaf ladybells starts blooming at the end of August and in September, being one of the few flowering plants that adorn Juliania during autumn.

In Europe, it is rare and endangered in all of its localities, which is why it is included into the list of Natura 2000 species.



Allium ericetorum Thore – Yellow Wild Garlic

This yellow wild garlic has a cylindrical underground bulb. The stem is up to 35 cm tall and has linear stalkless leaves. The inflorescence is thick and globose. The perianth is yellowish, with anthers sticking out of the flower.

It thrives amongst shrubs and in rocky grasslands from the lowlands to the subalpine belt all over Slovenia. The general distribution extends in the southern calcareous Alps, Dinarides, Carpathians and Apennines.



Allium lusitanicum Lam. – German Garlic

(*Allium senescens*)

The german garlic has a strong underground rhizome with ovate bulbs. The stem is up to 50 cm tall, sharply edged above, compressed below the inflorescence and leafy only at the base. The inflorescence is globose. The flowers are reddish purple or pink.

It thrives on scree and rocky grasslands, from the lowlands to the subalpine belt. It can be found in the Julian Alps and in Pohorje Mts, although it occurs elsewhere in Slovenia as well. The general distribution extends widely in southern and central Europe up to southern Siberia.



Anemonoides trifolia (L.) Holub subsp. *trifolia* – Three-leaved Anemone

(*Anemone trifolia*)

Our anemones were given their name after the scientific name *Anemone*, which derives from ancient Greek. These are plants with a loose perianth, which is easily blown away by wind (*anemos*).

The three-leaved anemone has a whitish underground rhizome. The three stem leaves are in fact trifoliate bracts. The tepals are white, exceptionally even reddish or sky blue. The anthers are white or bluish white.

The plant thrives in forests and amongst shrubs from the lowlands to the montane belt all over Slovenia. It can also be found in the mountains of Portugal and Spain, in the Southern Alps and Apennines, in the Carpathian Mts and in North America.

Like all anemones, this species is toxic: on the human skin it may cause flushing and inflammation.



Anthericum ramosum L. – Branched St. Bernard's Lily

This plant is a perennial herb with a short rhizome bearing thin roots. The leaves are grass-like and pointed towards the end. The inflorescence is a branched racemes, the six tepals are free and white, the inner broader than the outer ones.

The branched St. Bernard's lily grows in dry meadows and open forests from the lowlands to the montane belt all over Slovenia. It is distributed from Belgium and southern Sweden to northern Portugal, southern Italy and Greece. The flowers are pollinated by bees and hoverflies.



Aquilegia bertolonii Schott – Bertoloni Columbine

Slovenia is home to five species of columbines (*Aquilegia*). The generic name originates from the Latin word *aquila* (eagle). Although the name was allegedly given to it owing to the bent spurs of the corolla, this interpretation is not certain. The spurs were supposed to be reminiscent of the eagle's talons and curved beak; the flower, however, does not resemble several eagles putting their heads together.

Of the five *Aquilegia* species that can be found in Slovenia, the columbine of Bertoloni is the only one that has been included in the Red list of endangered vascular plants as a rare species.

The species is dedicated to the botanist Antonio Bertoloni (1775-1869), professor of botany in Bologna and author of a *Flora italica* (1834-1854) in five volumes.

The plant is 10-30 cm high, with an upright stem usually bearing a single-flower, less often two flowers. The flowers are blue to bluish purple and have somewhat hooked spurs which are a tubular outgrowth of the petal in which nectar is formed.

The species grows on scree, in rocky subalpine and alpine grasslands and in rock crevices here and there in the Kamniško-Savinjske Alps, in the southern part of the Julian Alps and in the northeastern part of Trnovski gozd.

The Bertoloni columbine is endemic of the Alps. It is distributed in northwestern Italy and southeastern France, which is its main range; in Slovenia it finds the easternmost limit of a disjunct distribution.



Aquilegia nigricans Baumg. – Granny's Bonnet

The stem of this species is glandular-hairy in the upper part. The nodding flowers are purplish blue, equipped with five spurs which are curved at the top. The plant grows in meadows, among shrubs, in open forests and in the dwarf pine zone. It is common in the Alpine district, but can also be found elsewhere in Slovenia. The general distribution extends to central and southeastern Europe.

The flowers are pollinated predominantly by bumblebees that usually bite through the spur in order to reach the nectar.



Armeria alpina Willd. – Alpine Thrift

According to popular belief, the plant that saved the life of badly wounded Goldenhorn is in fact the Pink Cinquefoil (*Potentilla nitida*). The well-known mountain photographer Jaka Čop, on the other hand, was very fond of remembering the story told to him in his youth by his father at his home at Bohinj. The plant was instead supposed to be the Alpine thrift, that allegedly grew from drops of blood of the legendary white chamois with golden horns. This species prospers in rock crevices, pastures, and gravelly grasslands in the alpine belt of the Julian and Kamniško-Savinjske Alps and in the Karavanke mountain chain.

The general distribution extends to the central and southern European mountains. The species is alpine, but the genus has a mainly Mediterranean distribution.



Aruncus dioicus (Walter) Fernald – Buck's Beard

According to popular belief, many plants that flower around Midsummer Day have a magic power. On Midsummer Day, the sun exerts its greatest power and nature is full of life force. One of the species dedicated to the ancient slavic Sun God *Kresnik* is the Goat's Beard, which has great defensive powers, for it protects us from witches, all evil spirits and even lightning.

It is a perennial herb with a simple stem that reaches 80-200 cm in height; the Goat's Beard is thus one of our largest perennial herbs. The leaves are soft, twice to three times pinnately parted. The flowers are unisexual and dioecious. Female flowers have white petals, while male flowers are yellowish.

In Slovenia, this species thrives in shady forests, among shrubs and in clearings, in more or less wet and shady sites. It can be found in western, central and eastern Europe, as well as in the temperate zones of Asia and North America.



Asparagus tenuifolius Lam. – Wild Asparagus

This species is a member of the asparagus family (Asparagaceae), its main characteristic being that the leaves are substituted by modified stems called phyllocladia. The wild asparagus has an upright herbaceous stem and needle-like phyllocladia which, however, are not evergreen and prickly, as in the mediterranean asparagus, but tender and capilliform. The flowers are whitish and green-striped. The fruits are red berries.

The species can be found all over Slovenia in light forests and amongst shrubs, from the lowlands to the montane belt. The general distribution extends widely in southern Europe, the Ukraine and Asia Minor.

As in other asparagus species, the young shoots, once cooked, are edible.



Aster alpinus L. subsp. *alpinus* – Alpine Aster

“The Alpine Aster excels among other plants with its rare contrast of colours in the inflorescence: around a golden yellow centre, a fairly wide wonderful pale violet ring is set”, wrote Ferdinand Seidl in 1918 in his booklet *The Vegetation of our Alps*.

The alpine aster is a member of the family Asteraceae, characterized by their numerous, often differently shaped flowers, which are grouped in heads (inflorescences that remind us of a virtual flower).

The alpine aster is an up to 15 cm tall plant. The basal leaves are fluffy and stalked, while the stem leaves are sessile (without a stalk). The inflorescence is a 4-6 cm wide head. In the middle of it, the so-called disc flowers are situated, which are tubular, yellow and bisexual. On the edge, ligulate flowers are located, which are violet or bluish violet and only female. The plant thrives on limestone ground, dry sunny grasslands, scree and rocks of our Alps as well as in Trnovski gozd and Mt Snežnik. The general distribution of this arctic-alpine plant extends from the mountains of central and southern Europe to the the Ural and Altai mountains, Siberia and North America.



Aster amellus L. – Italian Aster

This 20 to 50 cm tall plant is perennial. The stem, which is leafy, is branched in the upper part. The flowers, arranged in heads, are of two types: bluish purple ligulate flowers at the margin, yellow tubular flowers in the middle.

This species grows in dry pastures, open forests, on forest edges, on scree and rocky terrains from the lowlands to the montane belt in the whole of Slovenia. The general distribution extends to western, central and eastern Europe, Siberia, Caucasus, Armenia and Anatolia.



Astrantia major L. – Great Masterwort

This plant was given its scientific name in the Middle Ages owing to its radial involucre (*Aster* means star in Greek).

The great masterwort is a 30 to 90 cm tall perennial plant with a fasciculate underground rhizome. The flowers are arranged in a simple umbel surrounded at the base by a wide, greenish or pink involucre consisting of large bracts, which can be even longer than the flowers. The prominent involucre, which reminds us of petals at first sight, increases the optical effectiveness of the inflorescence and attracts pollinators.

In Slovenia, the plant thrives from lowlands to the subalpine belt in open beech forests, clearings, among shrubs and tall herbs. The general distribution extends to the Alps and to central and southern Europe.



Bellidiastrum michelii Cass. – Daisy star

(*Aster bellidiastrum*)

the generic name of the synonym, *Aster*, originates from ancient Greek: *aster* is a star referring to the radiating ligulate flowers at the margin of the head.

The leaves are arranged in a basal rosette, sparsely hairy above and thickly hairy underneath. The flowers are grouped in heads, the marginal flowers are ligulate and white, while in the middle there are yellow tubular flowers.

This plant grows in wet stony places from the montane to the Alpine belts, but can also be found in wet lowland gorges; it is quite common in our Alps, Dinarides and Gorjanci Mts. The general distribution extends to the mountains of southern and central Europe.



Bupthalmum salicifolium L. subsp. *salicifolium* – Yellow Oxeye

The generic name of this plant originates from Greek *bous* (ox) and *ophthalmos* (eye), referring to the large head, which is highly noticeable due to its yellow colour. The Germans, French and English literally translated the Latin name.

The yellow oxeye is an up to 50 cm tall perennial plant with an upright and unbranched or only slightly branched stem. The leaves are lanceolate and smooth-edged. Both the outer ligulate and inner tubular flowers are golden yellow, grouped into 3-6 cm wide heads.

The species grows in dry meadows, open forests, clearings and forest margins from the lowlands to the subalpine belt all over Slovenia. The general distribution is mainly European, but the species is absent in the northern parts of our continent.

Many people confuse this species with the medicinal arnica; the yellow oxeye, however, has no basal rosette of leaves and no characteristic scent.



Caltha palustris L. – Kingcup (Marsh Marigold)

“The marsh marigold’s home is any place with well soaked soil. It can therefore be found along streams, puddles and ditches, as well as in marshy meadows. It also loves settling around a spring that rises from soft ground, following gurgling wavelets far down to the deep river, “ wrote Martin Cilenšek in 1892 in his book *Our Harmful Plants in*

Images and Texts.

This hairless and about 30 cm high perennial herb has a thick, hollow stem, and dark green, shining, shallowly toothed cordate leaves. The perianth is single. The petals are golden yellow, shiny on the inner side and mostly greenish on the outer side. The fruits are follicles with seeds that swim and thus spread around.

The species thrives all over Slovenia in wet meadows, forests, amongst shrubs and along waters. The general distribution is circumpolar, extending to North America, northern and central Europe and northern Asia.

Like the majority of genera from the family of buttercups, the marsh marigold is toxic, for it contains saponins and alkaloids. When picked, it may cause inflammation and blisters on human skin.

As marsh marigold is well-known by most people, it has retained a true treasury of folk terms, such as *yurek*, *kureshnitza*, St. John's flower, and many more ...



Campanula cespitosa Scop. – Tufted Harebell

The generic name in Latin means 'little bell', due to the bell-like flowers.

Campanula cespitosa was described as a new species by the naturalist I. A. Scopoli in 1772 in his work *Flora carniolica*. He apparently found it in the Carniolan Alps above Kranj and in the vicinity of Idrija. This bellflower is thus one of the plants which have the typical locality in Slovenia.

It can be recognized by the characteristically barrel-shaped corolla. Scopoli further wrote that the plant has "elongated little bells, whose orifice is not very wide".

It thrives in crevices, on scree and gravel banks, from the lowlands to the subalpine belt. It is particularly common in the Alps, but it can also be found in the prealpine and Dinaric regions.

The general distribution extends to the Eastern Alps, while in the southeast it reaches as far as Gorski Kotar in Croatia.



Centaurea scabiosa L. subsp. *scabiosa* – Greater Knapweed

Two subspecies of the greater knapweed can be found in Slovenia. The leaves of the typical subspecies (*Centaurea scabiosa* subsp. *scabiosa*) are hairy and matt on both sides, with oval to oval-lanceolate segments, less often entire. The scarlet red tubular flowers are arranged in heads, the marginal ones longer than the central ones. The plant grows in dry meadows and pastures, amongst shrubs and in open forests, from the lowlands to the montane belt.

The other subspecies is Fritsch's Knapweed (*Centaurea scabiosa* subsp. *fritschii*) whose leaves are hairless and shiny on the upper side, with lanceolate or linear-lanceolate lobes (exceptionally entire). The plant grows in dry meadows and pastures, on scree and in open forests from the lowlands to the montane belt.

The distribution of both subspecies in Slovenia is not exactly known, but it seems that the former subspecies, which is distributed all over Europe and in Asia, is rarer than the latter.



Cephalaria leucantha (L.) Roem. & Schult. – Common Pale Round-head

More than two centuries ago, our flora was thoroughly studied by the naturalist Balthasar Hacquet. In the mountains above the Trenta Valley he discovered a new *Scabiosa* species, which he eventually named *Scabiosa trenta*. Then the plant mysteriously disappeared. It was searched for by many botanists, but to no avail.

The Trieste botanist Muzio de' Tommasini brought this unsolved enigma to the attention of his young friend Julius Kugy. Hacquet's drawing on a yellowed piece of paper sent Kugy on a legendary journey to the Julian Alps. He looked for the mysterious plant, but found instead the Kingdom of Goldenhorn (Zlatorog).

The enigma was finally solved by the Austrian botanist Anton Kerner, who examined the specimen in the herbarium kept at the Carniolan Provincial Museum in Ljubljana. Hacquet had not found a new species, but the already known Common Pale Round-head, which prospers in Karst woodlands and in sunny rocky terrains in the submediterranean region. The 'Scabious of Trenta' was a relict from the warmer interglacial periods, when Karst vegetation penetrated



deep into the heart of the Alps. It is most probable that Hacquet found the last specimens of this species, while his successors did not, given that the plant had already gone extinct on the western slopes of Mt Triglav. It was only later that Kugy learned how the enigma had already been solved. May as it be, *Scabiosa trenta* became one of his most precious poetic symbols, the symbol of something unreachable, searched for, beautiful and young. As a memory of the former times, the Common Pale Round-head now prospers in the Juliana Botanical garden in the Trenta Valley, where it blossoms from late summer to the first frosts.

Cirsium erisithales (Jacq.) Scop. – Yellow Melancholy Thistle

This plant reaches up to 1.5 m in height. Its Slovenian name (sticky thistle) was given to it owing to the sticky upper part of the stem. The involucral bracts are sticky as well. The leaves, covered by fluffy hairs, are deeply pinnately divided and encircling the stem. The yellow melancholy thistle has yellow tubular flowers arranged in nodding heads.

It can be found in forest meadows, clear cuts, on scree and in grasslands from the lowlands to the subalpine belt all over Slovenia. It is also distributed in the Alps, as well as in other montane parts of Europe.



Convallaria majalis L. – Lily of the Valley

In May, the lilies of the valley start flowering among shrubs, in forests and meadows. The month of May is dedicated to Mary; to whom the lilies of the valley are dedicated. As they bloom around Whitsun, they are also called 'whitsuns' here and there.

This plant has a creeping, branched, underground rhizome and a simple stem with two to three leaves which is 10-20 cm tall, bearing a one-sided raceme. The snow-white flowers with a wide, bell-shaped perianth have a pleasant scent. The fruit is a red berry. The species can be found in the whole of Slovenia and has a wide Eurasian distribution.

The lily of the valley is a toxic plant, since it contains glycosides that function as cardiac poisons. Poisoning often takes place in children who have been eating ripe and invitingly red berries, chewing leaves or even drinking water from vases in which lilies of the valley had been kept.

This was one of the oldest folk medicine plants. Its concoctions were used to mitigate nervous nausea and epilepsy. In one of the old prescriptions from 1720, one can read that distilled water from lilies of the valley alleviates pain and at the same time sharpens the memory.

In the Slovenian literature, it was Prežihov Voranc who wrote about *teardrops*, as lilies of the valley are called in the Slovenian region of Koroška. With his novelette he raised a monument to mothers' love.



Cyanus triumfetti (All.) Dostál ex Á. Löve & D. Löve – Trionfetti's Knapweed

(*Centaurea triumfetti*)

This plant acquired its species name after the 17th century Italian physician and botanist G. B. Trionfetti, who was also Director of the Botanical Gardens in Rome.

Trionfetti's knapweed is a perennial herb with a narrowly winged stalk and narrow, lanceolate, smooth-edged and fairly rigid leaves. The flowers are gathered in heads, the marginal ones are elongated and blue, while the central ones are reddish violet.

The species thrives in open forests, among shrubs and in rocky grasslands from the lowlands to the subalpine belt, in the Dinaric Mts, Kras (Karst) region and in Slovenian Istria. The general distribution extends to the mountains of central and southern Europe and Asia Minor.



Cyclamen purpurascens Mill. subsp. *purpurascens* – Purple Cyclamen

The Slovenian writer Janko Kersnik was rummaging through some old dusty papers: "Suddenly, a yellow little packet appears in front of me from all that paper chaos, and when I open it, I lay my eyes on a small dry, but well preserved cyclamen flower, or korchek, as we call it."

This tiny flower reminded him of a past event, when he wrote the story *Cyclamen*, titled after this symbol of romantic love. The German governess tore off the *korček* and asked Doctor Hrast:

“Do you know what the meaning of this thing is? Oh, you really don’t know!? Well, it’s dedication and patience – that’s the meaning of this flower in front of you, sir.”

The purple cyclamen has a globose tuber in the ground. The leaves are basal, simple, heart- or kidney-shaped, with a toothed margin, dark green, glittering and silvery spotted above, dark red beneath. The carmine red, nodding and pleasantly smelling flowers have the corolla lobes turned backwards. The plant thrives across the whole of Slovenia in mountain forests; the general distribution extends widely in southern and central Europe.

Particularly the raw tubers are highly toxic, for they contain glycosides that cause vomiting, stomach problems and diarrhea. In folk medicine, the plant was once used as a powerful laxative. It was also used by some mediaeval women in witchcraft practising.



Cypripedium calceolus L. – Lady’s Slipper

In his work entitled *From Yesteryear*, Julius Kugy asked himself, and proposed at the same time, where in Juliana we should stop for at least a moment:

“Or in a quiet nook, where the Lady’s slipper, which is so rare in the Julian Alps, is thriving and luxuriantly blossoming in the popular environment of dwarf-pine and rhododendron? For us, these are places consecrated to the plants’ mysteries, where we should devotedly dwell for a moment or two. There is no other way.”

When thinking of orchids, we usually imagine tropical flowers of the most unusual forms and colours. However, in Slovenia a few representatives of this family grow in meadows and forests: Green-winged orchids, black vanilla orchids ... and the Lady’s slipper can compete with numerous tropical relatives owing to their simple but selected beauty. This species already aroused the imagination of ancient botanists, who named it Venus’s slipper (*cypris* = Venus, *pedilon* = slipper). Among Slovenian folk names, there is also the term ‘Mary’s little slippers’.

This species has the largest flowers among all European orchids. They consist of four brownish, dark red, oblong tepals and a swollen lemon- to golden yellow, slipper-shaped labellum. This plant is pollinated only by females of insects belonging to the order Hymenoptera. The slipper-like labellum is in fact a trap from which the caught insects can escape only by shifting past the stamens and stigma.

The plant can be found in temperate areas of the Northern Hemisphere. It grows very slowly, since it needs no less than 15-17 years to grow from seed to such an extent that it can blossom for the first time!



Cytisus purpureus Scop. – Scarlet Dwarf Broom

(*Chamaecytisus purpureus*)

In the second edition of his *Flora Carniolica* (1772), the naturalist I. A. Scopoli published a description of a new species. All its details and natural sites had been sent to him by F. K. Wulfen, a citizen of Ljubljana between 1762 and 1763. Wulfen apparently saw the purple broom along the Soča River near Solkan, at the Mrzlek spring at the foot of Sveta gora and on Šmarna gora near Ljubljana. At a later date he published an even more precise description and two additional sites in Jacquin’s Booklet (1778): along the Sava River near Dol and in meadows along the Sava at Ponoviče.

The purple broom grows in the Southern Alps from Lake Como towards the east, to the Istrian karst and down to the northwestern Dinarides in Croatia.

In Slovenia, the plant thrives in rocky, shrubby places and in pine forests, as well as on dry and overgrown river gravels on carbonate bedrock, from the lowlands to the montane belt. The general distribution extends to Dinaric, pre-alpine, perhaps even pre-dinaric, sub-mediterranean, sub-pannonian and Alpine regions.



Dactylorhiza maculata (L.) Soó subsp. *maculata* – Heath Spotted Orchid

This species is classified into the orchid family (Orchidaceae), which is one of the richest among all flowering plants. Most orchid species are tropical, but in Slovenia some 80 orchid species are known.

Transplanting of orchids to the Juliana Botanical Garden has always caused numerous problems. Adult plants develop

from the seeds only if getting in touch with suitable species of fungi, which supply them with substances needed for their development. Young plants become dependent on the fungus with which they live in symbiosis. Fungi provide the orchid with water and minerals and draw organic nutrients from the plant.

The finger spotted orchids, or heath spotted orchids as they are known in the Slovenian language, were given their name after their finger-shaped tubers. In (true) orchids, however, the tubers are round. The epithet 'spotted' refers to the lower leaves, which are narrow lanceolate and dark-spotted. The flowers are light to dark pink.

The plant grows in meadows, open forests and on forest edges from the lowlands to the montane belt in the whole of Slovenia. It is distributed almost in the whole of Europe, Asia and northern Africa.

In Slovenia, all orchids are highly endangered, given that fewer and fewer suitable sites can be found for them. They cannot thrive in manured and unmown meadows.



Daphne blagayana Freyer – Blagay's Daphne

There is no doubt that of all the Slovenian plant species, Blagay's daphne has attracted most attention and most ink-spilling in the 19th century. For several centuries, this was our first botanical rarity, given that "it carried Carniola's honour and fame far into the wide world."

The story began on May 22nd 1837, when a farmer from Gora near Polhov Gradec brought a small branch of a yellow daphne to the Carniolan patriot Rihard Ursini, the Earl Blagay of Polhov Gradec. As the earl did not know the plant, he sent it on the ensuing day to his friend Henrik Freyer in the Carniolan Provincial Museum in Ljubljana, together with a cover letter in which he wrote that the species probably belonged to the genus *Daphne*. He also requested his friend to identify the plant. And Freyer named the unknown species 'Blagay's daphne' after Earl Blagay.



In the following year, the place was visited by the Saxony king Frederik August II, and in the very same year (1838) Blagay erected a unique monument in memory of the king, the royal visit and the daphne, which began to be also called "the king's flower". Prof. Tone Wraber described it as "an old monument to the old botanical culture in Slovenia".

For more than thirty years, Gora above Polhov Gradec was the only natural site of Blagay's daphne in Slovenia. Later on, it was discovered elsewhere in Slovenia, and outside our country as well. The general distribution is now known to extend widely in the Balkans (Croatia, Bosnia & Herzegovina, Serbia, Montenegro, Albania, Macedonia, Greece, Bulgaria and Romania). The northwestern limit of the distributional range is in the Carnic Prealps in northwestern Italy.

During his visit, Frederik August II expressed his wish and expectation that we, the Carniolans, will be capable of protecting the daphne and prevent its destruction. This was probably the very first non-utilitarian nature-conservation thought in Slovenia, with the "king's flower" also becoming the symbol of our conservationist activities.

Daphne cneorum L. – Garland Flower

Slovenia is home to six species of *Daphne*. The garland flower excels particularly owing to its fragrant flowers. These evergreen little shrubs prosper on dry and sunny slopes, in open forests and rocky grasslands.

The garland flower grows scatteredly in the montane belt almost throughout Slovenia. It is fairly common in Polhograjski Dolomiti, in the Zasavje region and at Kočevsko, but rare in the Alps, for it is found only in the Draga Valley below Mt Begunjščica and on the slopes of Smolnik along an old mining path leading to the Valvasor House below Mt Stol. In Europe, it is distributed in the southern and central parts of the Continent.

The dried flowers of this plant were once used as a mothproofener.



Dianthus sternbergii Capelli subsp. *sternbergii* – Sternberg's Pink

This is a gentle little plant, inhabiting thick and coarse screes. A particularly attractive contradiction is the fact that carnations belong to a mainly Mediterranean genus and are therefore an echo of the warm Mediterranean in our mountains.

In Slovenia, the Sternberg's Pink has a scattered distribution on fairly stable and already overgrown screes as well as in

rocky grasslands of the Julian and Kamniško-Savinjske Alps and the Karavanke Mts. The general distribution extends in the Southeastern Alps and only locally in the Northern calcareous Alps. Most often it can be found at altitudes between 1,500 and 2,000 metres, only on calcareous soils.



***Dianthus sylvestris* Wulfen subsp. *tergestinus* (Rchb.) Hayek – Trieste Pink Clove**

(*Dianthus tergestinus*)

Slovenia is inhabited by twelve different pink clove species. One of them is called the Trieste Pink Clove, after the city of Trieste.

From the strongly branched root, rosettes of linear, grooved, rigid leaves are growing. The stem leaves are opposite and linear. The stem and leaves are bluish green. The flowers are solitary or arranged in poorly branched inflorescences; under the calyx, scale-like bracts are present. The five petals have a milky pink to white (less often bright pink) limb, which may be unevenly toothed at the top. Clove pinks' petals have two parts: the upper part is a widened limb, the lower part a wedge-shaped nail.

In Slovenia, the Trieste Clove has a scattered distribution in rocky karst meadows and in rocky terrains of the submediterranean zone of Trnovski gozd down to Istria, and in the Kočevje area. The plant's entire distribution extends to the western part of the Balkan Peninsula, particularly along the coast of the Adriatic Sea and in Bosnia and Herzegovina.



***Dictamnus albus* L. – Burning Bush**

The stem of this up to one metre tall plant is covered with thick glandular hairs. The leaves are imparipinnate. The large bilaterally symmetrical flowers are arranged in racemes and have five pink or white petals with darker veins.

The entire plant contains much volatile essential oil, which gives off a pleasant and powerful lemon scent and is also flammable on hot days, a reason that explains why the plant is also known as "burning bush".

The species inhabits rocky sunny slopes at the edges between pastures and scrubland. In Slovenia, it is most common in the Kras region, but can also be found in the interior, for example on Šmarna gora and Mt Boč.



***Echinops exaltatus* Schrad. – Tall Globethistle**

The generic name of this plants derives from Greek *echinos* (hedgehog) and *ops(is)* (outer appearance, image). The spherical compound inflorescences are reminiscent of a ("prickly") hedgehog!

The plant is up to 2 metres tall and the leaves are covered with rigid trichomes in the upper surface and are unpleasantly sharp on the margins. The spherical inflorescences are large, with whitish or greyish flowers in a monofloral head which is a special feature of this genus.

The tall globethistle can be found along waters, paths, hedges and forest margins in the prealpine, predinaric, submediterranean and subpannonian regions. The general distribution extends to NE Italy, Hungary, Bosnia, Serbia and Bulgaria.



***Echinops ritro* L. subsp. *ruthenicus* (M. Bieb.) Nyman – Southern Globethistle**

This up to half a metre tall plant has a white felted stem and pinnate, thorny toothed leaves which are brilliant dark green above and white-felted beneath. The flowers are arranged in bluish spherical heads. The corolla is dark blue at

the top, while the anthers are light blue.

In Slovenia, the southern globethistle grows in karst meadows and montane pastures. It can be found on the southern slopes of Trnovski gozd, on Mt Nanos and in Čičarija. The general distribution extends to Spain and the Near East.



Epimedium alpinum L. – Barren-wort

This plant is an up to half a metre tall perennial herb with twice ternate leaves. The flowers have four blood-red sepals and four yellow petals and are arranged in a loose raceme.

The species can be found in forests and on forest margins in the Alps and Breginjski kot, in the Nadiža Valley in the surroundings of Kobarid, and elsewhere in Slovenia. The general distribution extends to southern Europe. The species probably survived glaciations in the Balkans, from where it spread to the Southern Alps.

The British and Germans call it also 'Bishop's Hat', owing to the characteristic shape of the flowers.



Epipactis atrorubens (Hoffm. ex Bernh.) Besser – Dark red Helleborine

This plant is up to 60 cm tall, with an often reddish or violet stem bearing lanceolate leaves and flowers arranged in loose inflorescences. The tepals are dark scarlet, sometimes violet, and smell of vanilla.

The species grows in open forests and on dry grassy slopes from the lowlands to the montane belt in the whole of Slovenia. The general distribution extends widely in Europe and Asia (Caucasus and Iran).

Although the species of this genus are called 'marshy plants' in the Slovenian language, only one of them is a true marsh plant, while the others grow in dry and warm sites.



Eryngium alpinum L. – Alpine Eryngo

Although the alpine eryngo belongs to the family Apiaceae, it reminds us of thistles, owing to its very unusual inflorescence surrounded by an involucre of picturesquely shaped and metallic blue, radiating bracts.

The plant is distributed in the Jura, Alps and in the western part of the Balkans. The best known alpine eryngo's sites in Slovenia are at Črna prst and Porezen. The natives of Bohinj call it the "queen of the Alps". In the 19th century, it was also abundant at Golica and in the Karavanke Mts. Shepherds called it "sleepyhead", as it was put into the cradles of restless babies and was supposed to bring them a peaceful sleep. The plant's natural occurrence in the Karavanke Mts is questionable today. In Slovenia, it can thus be found with certainty in the Julian Alps only.



Eryngium amethystinum L. – Amethyst Eryngo

This plant is a member of the family Apiaceae, although at first sight it does not remind us of the characteristic representatives of this family, such as those of parsley or carrot.

The amethyst eryngo has tiny flowers grouped in ovate inflorescences surrounded by thorny bracts, which are green at first, but eventually turn characteristically blue, like the upper parts of the plant.

It thrives on dry rocky slopes, in pastures, open woodlands and shrublands, being most common in the Kras (Karst) region. In the Alpine district it can be found in the Soča Valley and at Breginjski kot. The species has been found



even in the vicinity of Ljubljana. The general distribution extends to Italy, Sicily and the Balkans. Our renowned botanist Tone Wraber wrote that this is a “true Karst inhabitant”.

Eupatorium cannabinum L. subsp. *cannabinum* – Hemp-agrymony

This plant with richly leafy stems can reach to 2 m in height. The flowers, all tubular, are gathered in narrow, cylindrical heads. The corolla is dirty pink or almost white.

The species grows in clearings or damp and open forests and in rather humid sites, from the lowlands to the montane belt, all over Slovenia. The general distribution encompasses almost the whole of Europe, Asia and America.

The species is also a medicinal plant, since it contains bitter substances, essential oils and tannins. It is generally used to alleviate colds.



Euphorbia amygdaloides L. subsp. *amygdaloides* – Wood Spurge

Spurges are plants with a milky sap and a characteristic inflorescence called cyathium. The latter consists of a single pedunculate female flower devoid of perianth, surrounded by 5 male flowers, which are usually reduced to a single stamen. The flowers are surrounded by five bracts, which are grown into a cup-shaped structure. The generic name refers to Euphorbus, who was the doctor of the Mauritanian King Juba.

The wood spurge is a perennial plant with a woody main shoot, 30-60 cm tall, equipped with slightly hairy leaves. The basal rosette of leaves survives the winter, and eventually flowering stems grow from it. In Slovenia, it is also called *wheeler*, given that its rosette is reminiscent of a wheel.

It is common in forests, clearings, glades and amongst shrubs from the lowlands to treeline all over Slovenia. The general distribution extends from Europe to Asia.



Galatella linosyris (L.) Rechb.f. subsp. *linosyris* – Goldilocks Aster

(*Aster linosyris*)

This is a 20-50 cm tall perennial plant. The stem is equipped with numerous linear leaves. The heads, gathered in inflorescences, have only tubular flowers of a yellow colour.

In Slovenia, this species can be found on dry sunward slopes, in shrublands and glades, from the lowlands to the montane belt in the submediterranean, prealpine and subpannonian regions. The general distribution extends to southern, western and central Europe, the Caucasus, Armenia and Algeria.

In the Juliana Botanical Garden, the plant blossoms late and can still be seen in September and even in October.



Genista sericea Wulfen – Silky Broom

The generic name *Genista* is a Latin term for one of the brooms, although it may be derived from the Celtic *gen*, meaning a small bush. The Plantagenets, the English ruling family of Frankish origin, derived its name from that of brooms.

Genista sericea is a semibush with stems which are woody and branched at the base. The leaves are simple, oblong, hairless above, silky-hairy beneath, after which the plant was given its species name, both in Latin and in Slovenian. The papilionaceous flowers are arranged in racemes; the corolla is bright yellow, the standard and keel are silky-hairy.

The species was described more than two centuries ago by the naturalist and botanist Franc Ksaver Wulfen, mentor to Karel Zois and Franc Hladnik. He spent a few years in (Italian) Gorizia and carried out a research on the plants of Slovenia. In its professional description he wrote that he “quite often came across this gorgeous plant, which always grows out of limestone rock crevices, more or less in early June, blossoming in the mountains between Opicina and Trieste”. This line was translated into Slovenian by Tone Wraber in his work *A Hundred Distinguished Plants of Slovenia*.



In our country, the plant thrives in rocky and karst hay meadows and is most common on Mt Nanos, but can also be found on Čaven and Vremščica, in the fore-mountains of Snežnik and in Čičarija. The general distribution extends from northeastern Italy and along the Dinarides to Albania and thus is of the so-called western Balkan-northern Italian type. Owing to the expansion of karst woodlands, this is now considered as a highly endangered plant.

***Genista sylvestris* Scop. – Dalmatian Broom**

A fairly high number of new plant species were found and described in Slovenia, where their birthplace (or typical locality) is situated. One of them is *Genista sylvestris*, which was described from Mt Nanos by I. A. Scopoli in 1772 in the second edition of his work *Flora carniolica* (Carniolan Flora).

This plant can be thorny, as the lateral branches end into soft thorns. The yellow flowers are arranged in narrow racemes. All parts of the plant have adpressed silky-hairs, except the calyx and the fruit, which are naked.

This species grows in rocky woodlands and on bushy slopes in the submediterranean area along the southern margin of Trnovski gozd, in the mountains of Nanos, Javornik and Snežnik, and in the Kolpa River Valley. The general distribution extends to the Apennines and along the Dinaric Mts from Slovenia to Albania.



***Gentiana lutea* L. – Yellow Gentian**

“The gentian was found by the Illyrian King Gentius; it thrives everywhere, but is most exquisite in Illyria.” This is what Pliny wrote about this plant in antiquity. Its medicinal power was recognized already by the last Illyrian king Gentius, after whom the whole genus of gentians derives its scientific name. The gentian's rhizomes are much sought after on the global medicinal plant market. Specifically, they contain several medicinal bitters that alleviate stomach problems.

In Slovenia, two subspecies can be found. The Yellow Gentian

(*Gentiana lutea* subsp. *symphyandra*) has fused anthers and is generally distributed in karst meadows, Trnovski gozd and on southern margins of the Julian Alps. The subspecies with free anthers is called Vardjan's Great Yellow Gentian (*Gentiana lutea* subsp. *vardjanii*) and was described from Spodnja Komna. It thrives in grasslands, pastures

and on screes in the Julian Alps, rarely in the Karavanke Mts (Vrtača, Begunjščica) and in the Kamniško-Savinjske Alps (below Mt Grintovec).



***Geranium argenteum* L. – Silvery Crane's Bill**

Julius Kugy, who loved to visit Juliana in his old age, wrote: “My prettiest targets lie in Juliana’s upper part. The gorgeous flowerbed with the Silver Cranesbill, with a gentle harmony of colours of its silvery and finely incised leaves and the attractive, open, delicately violet flowers. That’s where our memories are waiting for hundreds of hours full of peace and tranquillity, spent on the peaks of warm, pleasantly sunlit foremountains and viewpoints of the Julian Alps. For this silvery hairy “stork’s beak” loves such elevated seats with views open in all possible directions, as it clearly feels well there.”

The Silver Cranesbill is a southern Alpine and northern Apennine species. In Slovenia we find it in the mountains of Bohinj and Krn, where it can cover upland grasslands in silver-grey carpets. One may find it on rubble and in rock crevices as well.



***Geranium macrorrhizum* L. – Rock Crane's-bill**

The generic name of this species derives from ancient Greek (*geranos* = crane). Its long-billed fruits are reminiscent of cranes’ beaks. The Slovenian name, on the other hand, tells us that these plants are medicinal and that they were formerly used in folk medicine. Owing to the substances they contain, they were occasionally used as means for staunching blood.

The bigroot geranium has a strong underground rhizome, after which takes its name. The leaves are only basal and long-stalked. The stalks are overgrown with sessile glands and long glandular and non-glandular hairs. The stem and the flower peduncles are covered by numerous sessile glands. The petals are scarlet-coloured. The flower peduncles are upright after flowering.



The plant can be found on shady, rocky slopes, on rubble and among shrubs from the lowlands to the montane belt. In our Alps, it grows only in the Posočje region of the Julian Alps; it is distributed in the Balkans, Southern Alps and Apennines.

Globularia cordifolia L. – Heart-leaved Globe Daisy

The generic name of this plant derives from the Latin word *globulus*, meaning 'a little ball', due to the inflorescence which indeed, reminds us of a sphere.

Slovenia is home to three species of globe daisies. The Heart-leaved Daisy is a semi-bush with a creeping stem. All leaves are basal, while the flowering stem is leafless. The inflorescence is globose, the flowers are blue.

As the other species, the heart-leaved daisy adapted to the high-mountain life. With the lignified cauloids "these plants creep and closely nestle to the ground, branch out widely on rocks and, by doing so, construct a thick trellis-like network." So wrote Ciril Jeglič in his first *Juliana Guide* in 1963.

The plant thrives on rocks and in crevices, as well as on grassy slopes from lowlands to highlands. The general distribution extends to the mountains of central and southern Europe.



Grafia golaka (Hacq.) Rchb. – Grafia

The naturalist Balthasar Hacquet carried out research on the Carniolan flora in the second half of the 18th century. His most significant botanical work, entitled *Plantae alpinae Carniolicae*, published in 1782 in Vienna, contained the description of 12 plants that thrived in the Carnic Alps and in Istria, which were a in his opinion new species. He named all of them after the places where they were found and where he made drawings of them.

One of the newly described plants was *Athamanta golaka*. At a later date, the species was given the generic name *Grafia* after the pharmacist and botanist Žiga Graf, but retained the species name after Mt Golak in Trnovski gozd.

The general distribution extends in the Southeastern Alps, Central Apennines and in the western part of the Balkans, reaching south up to the Albanian Prokletije. In Slovenia the species can be found in rocky grasslands and amongst shrubs in the montane belt of the Kamnik and Julian Alps, in the mountains of Polhov Gradec, on Šmarna gora, and in the Notranjsko and Kočevsko regions.



Gypsophila repens L. – Creeping Baby's-breath

The generic name of this plant originates from Greek. *Gypsos* is gypsum, *phileo* means 'I love'. Some species actually thrive on calcareous soils.

the plant has a simple stem and linear, somewhat fleshy, bluish green leaves. The petals are white or pale pink.

The creeping baby's-breath is one of the plants that can anchor themselves on unsteady scree. As the main root reaches deep into the rubble, it is one of the pioneer plants on scree.

It grows on rocks, rubble and in rocky grasslands in the mountains of the Julian and Kamniško-Savinjske Alps, as well as in the Karavanke mountain chain. The general distribution extends to the Pyrenees, Apennines, Alps, Jura Mts and the Carpathians.



Hemerocallis lilioasphodelus L. – Lemon (Yellow) Day-lily

The generic name of this plant derives from the Greek *hemera*(day) and *kalòs* (beauty), because the individual flowers are open for a single day only.

The lemon day-lily is an up to one metre tall perennial with grassy green, linear leaves. The inflorescence consists of six to nine flowers. The tepals are grown into a tube at the bottom, free in the upper part, forming a funnel-shaped, bright yellow and pleasantly scented flower.

This plant is reminiscent of lilies; it differs from them by the stem, which is leafless and not leafy as in the lilies.

It thrives in damp forests and sandy places along waters from the lowlands to the montane belt all over Slovenia. It has a relatively small range in Slovenia and northeastern Italy along the foot of the southeastern calcareous Alps.



Hladnikia pastinacifolia Rechb. – Hladnikia

In 1819, the botanist Franc Hladnik found a plant of an unknown genus from the family Umbelliferae on Mt Čaven, on the edge of Trnovski gozd. Later on, it was described and named *Hladnikia* after its finder.

At first sight, *Hladnikia* looks as nothing special – at least the first time we see it knowing nothing about it.

It grows in rocky grasslands and on rocks in Trnovski gozd on Čaven, Kucelj, Zeleni rob and Poldanovec. Its general distribution is small with a very limited range.

Hladnikia is the only species of a monotypic genus and represents an old relict of the pre-glacial flora.

It is the only endemic genus of the Slovenian flora, so that the university botanist professor Tone Wraber described it as “one of the noblest plants of our flora”.



Horminum pyrenaicum L. – Dragonmouth

In August, the dragonmouth starts blossoming in the Bohinj mountains. The deep, warm blue-violet colour of its flowers is a true contrast to the dark green leaves.

In Slovenia, the dragonmouth has a scattered distribution limited to areas with calcareous substrates, in rocky grasslands and pastures of the subalpine and alpine belts of the Bohinj part of the Julian Alps.

The general distribution extends to the Alps and the Pyrenees, mostly in the outer mountain chains close to the Mediterranean. The genus has a single species only (monotypic genus). Its general distribution, as well as the fact that the genus has one species only, indicate that it belongs to a relict element of the Alpine Tertiary vegetation.



Inula ensifolia L. – Sword-leaved Inula

This is a up to 60 cm tall perennial plant with turgid leaves, which are linear to linear lanceolate, narrower at the bottom and, rarely, woolly hairy along the margins. The golden yellow ligulate and tubular flowers are grouped in heads.

The swordleaf inula can be found in calcareous rocky terrains, on sunny rocky slopes, and in Karst mown meadows, from the lowlands to the montane belt. In the Alps it can be found in the Julian Alps and in the Dinaric, prealpine and predinaric regions (Kolpa Valley, Gorjanci Mts, Zasavje) and most commonly in the submediterranean region. The general distribution extends to Austria, Italy, Hungary, Russia, the northern Balkans and Caucasus.



Inula hirta L. – Downy Elecampane

This plant is a 10 to 50 cm tall perennial with hairy stems and leaves. The golden yellow flowers are gathered in heads.

It grows on sunny grassy and rocky slopes, in rocky terrain, and in open forests, from the lowlands to the montane belt in the whole of Slovenia, but it is commonest in the Karst region. The general distribution extends in western, central, southern and eastern Europe as well as in the Caucasus and Siberia.



Inula spiraeifolia L. – Spiraea-leaved Inula

This plant is a 30 to 80 cm tall perennial with a richly leafy stem. The stem leaves are sessile, with a rounded base. The head contains many small, golden yellow flowers.

In Slovenia this species can be found on bushy, rocky slopes and in cultivated land from the lowlands to the montane

belt in submediterranean and Dinaric regions. The general distribution extends widely in southern Europe.

In her identification key from 1951, our well known botanist Angela Piskernik reports the name *snake death* for this plant.



Iris cengialti Ambrosi ex A. Kern. – Southern Alpine Iris

(*Iris pallida* subsp. *cengialti*)

The generic name originates from the Greek/Latin term *iris*, which refers to the rainbow as well as to a God's messenger. The species is highly variable: in Slovenia, two indigenous subspecies can be found.

The Illyrian Iris (*Iris pallida* subsp. *illyrica*) grows in dry karst meadows and in rocky terrains. From its underground rhizome, sickle-shaped leaves are sprouting. The stems bear two to five flowers. The blossom directly below the highest flower is sessile or rests on a short peduncle. The perianth consists of 6 tepals, the inner ones upright, the others bent downwards. The flowers are light to dark violet. In Slovenia, the plant occurs in the Karst region and in the Istrian karst mountains (Čaven, Nanos, Vremščica, Slavnik). The general distribution extends to the northwestern Dinarides.

The perianth of the southern Alpine iris (*Iris pallida* subsp. *cengialti*) is dark blue to violet. The stem bears two to three flowers. The blossom directly below the highest one is situated on a peduncle which is at least three centimetres long. The plant thrives on rocky-bushy slopes and scree in the Julian Alps (Posočje region and Bohinj).



Iris graminea L. – Grass Iris

The name of this plant tells us that its leaves are reminiscent of those of grasses.

The plum-scented iris is a perennial plant with winged, to 40 cm tall stems. The basal leaves are longer than the stem and grass-like. The tepals are light blue or purple. The inner tepals are upright, whilst the outer tepals are turned down. The flowers have a fruity aroma reminiscent of that of plums.

The species grows in dry meadows and in warm scrublands from the lowlands to the montane belt all over Slovenia. The general distribution encompasses central and southern Europe.



Iris sibirica L. – Siberian Iris

This is a perennial plant with a thick underground rhizome and upright, round and hollow stems which are 30-50 cm tall. The leaves are linear-lanceolate. The flowers are located in the axills of brown bracts that are skin-like in the upper part. The tepals are bluish purple, whitish at the bottom, with darker bluish purple veins.

The plant thrives in wet habitats such as marshy meadow from the lowlands to the montane belt all over Slovenia. Its distribution extends into Asia as far as Siberia (hence the species' name) and Japan.

As its sites are being drained, the Siberian iris is becoming increasingly endangered.



Jacobaea abrotanifolia (L.) Moench subsp. *abrotanifolia* – Orange-flowered Groundsel

(*Senecio abrotanifolius*)

This plant has leaves which are pinnately divided into narrow, linear to thread-like, hairless, shiny green lobes. The flowers are gathered in heads, the marginal flowers are ligulate and yellow, those of the disc are tubular and bright orange to orange-red.

The species grows in rocky grasslands, on scree and in dwarf pine stands from the montane to the alpine belts.

The orange-flowered groundsel is more common in the Alps, but it is also found at Veliko Kozje, on Sveta Gora and Čaven. The general distribution extends to the Eastern Alps, including the northeastern Dolomites.



***Knautia fleischmannii* (Hladnik ex Rechb.) Pacher – Fleischmann's Widow Flower**

Andrej Fleischmann (1804-1867) was a gardener in the Ljubljana Botanical Garden from the age of fifteen till death. He was a disciple of Franc Hladnik, the Garden's founder. With him, he walked the entire Carniola, when collecting plants for the garden and its herbarium. When Hladnik went blind, Fleischmann proceeded with his botanical work. In 1843 he published the book *An Overview of the Carniolan Flora*, but his data are not always accurate and reliable. With his herbarium specimens he participated in the collection *Flora Germanica exsiccata*. For this notable herbarium collection he obtained a till then undescribed plant, which was soon named after him as *Scabiosa fleischmannii*; later on, it was classified in the genus *Knautia*, but retained its species name.



Fleischmann collected two subspecies of his *Knautia*, which slightly differ in the shape of leaves. On Katarina hill near Ljubljana he found the subspecies *Knautia fleischmannii integrifolia*, while on Grmada in Polhograjski Dolomiti he came across the subspecies *Knautia fleischmannii heterophylla*. Today, both are classified as simple forms of the same species.

The rhizome proceeds into a floral stem, with rosettes growing at the side. The stem leaves are, at least in some specimens, dissected. The leaves are somewhat leathery, thinly hairy or almost naked and shiny. The globose inflorescences are surrounded by involucral bracts. The flowers are 4-lobed, reddish purple.

Knautia fleischmannii is an endemic plant of the southeastern Pre-alpine mountains. It can be found in dry grasslands and shrublands from Polhograjski Mts to Istria and the region of Kočevje, with a single locality at Gorski Kotar.

***Lathyrus pannonicus* (Jacq.) Garcke subsp. *varius* (Hill) P.W. Ball – Variegated Pea**

This plant belongs to the family Fabaceae. The genera of this family are characterised by their papilionaceous flowers with five petals: the upper petal is called standard, the two side petals are called wings, while the lower two petals form the so-called keel and are often grown together at the bottom. The fruit is a multi-seed legume, which opens with two valves.

This species has a short subterranean rhizome bearing tuberous roots. The leaves are paripinnate, with two to three pairs of linear to narrowly lanceolate leaflets. The petals are yellowish white, but the standard can occasionally be embellished with a reddish tinge.

In Slovenia this species can be found in the submediterranean region in mown meadows and in places overgrown with shrubs. The general distribution extends from southern and eastern Europe to Siberia.



***Leontopodium nivale* (Ten.) Hand.-Mazz. subsp. *alpinum* (Cass.) Greuter – Edelweiss**

(*Leontopodium alpinum*)

The cradle of the genus *Leontopodium* is in the mountains of central Asia, where many species can be found. Although in fact almost an alien, the edelweiss is considered as a symbol of the Alpine flora.

At the top of its stem, it carries a single 'virtual flower' which, in fact, consists of tiny florets arranged in small heads, surrounded by long radiating bracts. The entire plant is thickly covered by white hairs.

Being often picked, the Edelweiss became endangered already in the 19th century. In the Goriška region it became protected in 1896, and two years later in Carniola and Styria as well.

In 1899, the journal Planinski Vestnik reported the following on the first (and till now probably exceptional) penalty for violating the law:

“For pulling edelweisses out of the ground, Janez Rekar from Mojstrana, known as “Roža in Jaga” by the locals, was condemned, apparently as the first inhabitant of Carniola. The County Governorship in Radovljica sentenced him to 6 hours of imprisonment.”



Lilium bulbiferum L. subsp. *bulbiferum* – Orange Lily

This plant has a white, scaly bulb in the ground. The stem is densely covered by simple, linear alternately arranged leaves. The reddish orange flowers with red anthers are upright and bell- or funnel-shaped.

The species' name refers to the bulbils located at the axils of leaves, which are used for vegetative reproduction of the plant; from the bulbils, young plants burst already in the ensuing year and can start blooming in no more than five years.

The Orange Lily grows in meadows and amongst shrubs from the lowlands to the montane belt. The general distribution includes Italy, Corsica, the Alps from the Primorje Alps to Lower Austria and Slovenia, and the Balkans.



Lilium carniolicum Bernh. ex W.D.J. Koch – Carniolan Lily or Golden Apple

The Carniolan lily, also known as the “golden apple” in Slovenia, has a green underground bulb and simple, alternate leaves. The bright orange tepals, sprinkled with dark dots, curl back, and the nodding flowers indeed remind us of a golden apple. They have, however, a “stinky, heavy and foul smell”, as written more than two centuries ago by the Klagenfurt botanist F. K. Wulfen.

The species is distributed from northeastern Italy to western Bosnia. It is most plentiful, however, in Slovenia, where it is found in the Alps, in the Karst, Notranjski Snežnik and the area of Zasavje. The name Carniolan lily tells us that it was baptised after the former Carniola, which embraced the regions of Gorenjsko, Dolenjsko in Notranjsko. The botanist who described the species for the first time did not precisely determine its typical locality, but merely wrote that it grew in Carniola and in the Littoral region.



Lilium martagon L.– Turk's Cap Lily

The Turk's Lily is similar to the Carniolan Lily. It has a golden yellow, scaly bulb in the ground. The tepals also folded back, but pink-violet in colour, with darker spots. As its flower reminds us of a turban, this lily was given the adjective Turk's Lily. The Latin species name (*martagon*) derives from an Arab term meaning ‘turban’. Henrik Freyer, on the other hand, used the name ‘Heathen Lily’ for this plant in 1836. The Turk's Cap Lily is distributed almost across Europe and in the temperate regions of Asia. In Slovenia, it is much more common than the Carniolan Lily. It thrives amongst shrubs, in clearings and forest meadows, from the lowlands to the subalpine belt.



Lomelosia graminifolia (L.) Greuter & Burdet subsp. *graminifolia* – Grass-leaved Scabious

(*Scabiosa graminifolia*)

This plant has linear, silvery-silky leaves. The flowers are gathered in flattened to globose heads, with marginal flowers clearly larger than the central ones. The single flowers have five purple petals which are fused together.

The species grows in rocky pastures, on rocks and scree in the montane belt. In the Alpine district it can be found in the Julian Alps (Bohinj, Breginjski kot, the Tolminka valley), but is more common in the submediterranean region (southern slopes of Trnovski gozd). The general distribution extends to the central and southern European mountains.

In his first guide through the Juliana Botanical Garden from 1963, Ciril Jeglič wrote the following about this species:

“This plant is especially welcome in the garden, considering that its pale violet inflorescences above the silvery leaves keep developing from the summer far into the autumn.”



***Medicago pironae* Vis. – Pirona's Medick**

This is a perennial plant with bright yellow flowers, which differs from other species of the genus in the fact that the legumes have short, flattened prickles and are thickly overgrown by glandular hairs.

It thrives on rocky slopes and on rubble in the Soča Valley (Sabotin, Sveta gora, Modrej, Plave), and can also be found in the neighbouring Friuli region of Italy.

The species is dedicated to the Italian botanist G. J. Pirona, who lived in the 19th century and was the author of the first book on Friulian plants. He discovered the new species in Mt Matajur, and eventually the plant was named after him.

This species is an older (conservative) endemic plant of the southern Carnian and Julian Pre-Alps, while the central Posočje area is the eastern limit of its range.



***Molopospermum peloponnesiacum* (L.) W.D.J. Koch subsp. *bauhinii* I. Ullmann – Striped Hemlock**

“Look at that tall and slender apparition in an artful attire, surrounded by drooping veils, just like an eminent ballerina... She came from the green carpets of Matajur, this classical site of plants in the Upper Primorsko. Who created the drawing for this leaf? Who cut it with such care and artistic skill? These leaves are a truly wonderful work of art! Everything about her is royal. Indeed, I see in her the queen of Apiaceae!” So wrote Julius Kugy.

In Slovenia, this species can be found in the Julian Alps and along the northern margin of the submediterranean region.



***Narcissus radiiflorus* Salisb. – Mountain Narcissus**

The “keyhole” or “mountain narcissus” is a plant that has no less than 120 names in the Slovenian ethnic territory, collected by the Slovenian ethnologist Milko Matičetov. An ancient legend says that Mary once strolled through blossoming meadows. All flowers were greeting her, humbly bending their heads, except the narcissus that arrogantly remained upright. Mary decided to punish them by striking each flower with her stick. This was the reason why the keyholes’ stems are still hooked today.

In Slovenia, the narcissus is abundant in the meadows above Jesenice, but can also be found in floodplain meadows along the Mura River, in montane grasslands of the Kočevje region and in hay meadows across the Karst region and Istria. Why do narcissus occur here and there in such great numbers? To a certain extent, this is the result of man’s management of grasslands. In the past, the steep grasslands on the slopes of Golica were scythed almost to the top of the mountain, thus preventing meadows getting overgrown and turning into forests. After World War II, keyholes still thrived so abundantly that their whiteness could be noticed at a distance “of two hours’ walk”. The abandonment of scything was the reason why these flowers are no longer as plentiful as they used to be. The grasslands are getting overgrown, while in the lower parts meadows are being transformed into pastures for the needs of intensive livestock farming. The surfaces are levelled by bulldozers, well fertilized and fenced with electric wire. In such meadows, only grass and dandelions can grow.



Paederota bonarota (L.) L. – Blue Veronica

Although there is almost no soil in rock crevices, certain plants are adapted to such conditions and grow there from seeds.

In the western part of the Julian Alps, the blue veronica may be seen hanging in tussocks from rock crevices. It has round and almost naked, dark green and shiny leaves. The inflorescence is initially thick, the flowers are violet blue, with the two stamens protruding from the corolla tube. The inflorescence lengthens during fruit ripening.

This plant grows only on limestone or dolomite. It is distributed from the Bergamo mountains in N Italy to the Julian Alps, northern Tyrol and the Salzburg Alps in Austria.



Paederota lutea Scop. – Yellow Veronica

Much more common in Slovenia than the blue veronica is the yellow veronica, which has ovately lanceolate, matt green leaves and a yellowish corolla which is only slightly shorter than the stamens. The plant tends to hang down from steep rock faces.

It thrives only on limestone and dolomite, on damp rubble and in rock crevices in the southeastern calcareous Alps, very rarely in the northern calcareous Alps, and in Herzegovine in the Balkans.

In Slovenia, the yellow veronica grows mostly in the Alpine district. As a Pleistocene relict, however, it can also be found in shady gorges outside the Alps. The lowest locality in the Country is at Radeče along the Sava River, at an altitude of 200 m only.

In places where the blue and yellow veronica grow together, an interesting hybrid known as Churchill's Veronica (*Paederota x churchillii*) may be found. This hybrid, which was found for the first time on Gartnerkofel in the Carnian Alps (Austrian Carinthia), has dirty yellowish-violet flowers. In Slovenia it can be found on Mt Mangrt as well as in the Juliana Botanical Garden.



Paeonia officinalis L. subsp. *officinalis* – Common Peony

If we know only the peonies growing in our gardens, we will be surprised by the first acquaintance with this genus in the open shrublands on the mountains of Nanos, Vremščica, Slavnik and elsewhere in the Kras region. The ancient genus *Paeonia* is distributed in the wider Mediterranean area. In ancient times, the species were a popular medicine against jaundice and diseases of the bladder and kidneys. Much later they were used for widely different purposes. The flowers helped to stop “women’s bleeding”, treated epilepsy and gout; with crushed rhizomes, bleeding from the lungs was alleviated, while the mixture of honey, wine and rhizomes was used against tuberculosis.

In China, the Peony is a symbol of wealth and honour. And as we occasionally say that somebody “blushed like a peony”, it also became the symbol of shyness.



Papaver alpinum L. subsp. *ernesti-mayeri* Markgr. – Julian Alpine

Rough scree slopes in our Alps are home to the silky yellow- and white-flowered alpine poppies, anchored with powerful rhizomes among sharp stones.

Four subspecies occur in Slovenia. The only subspecies with white flowers is the Julian alpine poppy (*Papaver alpinum* subsp. *ernesti-mayeri*), which is endemic to the Julian Alps, but grows in the Abruzzi Apennines as well. The other three subspecies are yellow-flowered.

Petkovšek alpine poppy (*Papaver alpinum* subsp. *victoris*) is endemic to the Bohinj-Krn group in the Julian Alps.

The Rhaetian alpine poppy (*Papaver alpinum* subsp. *rhaeticum*) grows in the Julian Alps, with the exception of the Bohinj-Krn group, and on Mt Skuta in the Kamniško-Savinjske Alps; the general distribution extends to the southern Alps, the southern parts of the Central Alps, and from the Pyrenees to the Balkans.

The third yellow-flowered subspecies of the alpine poppy is the Kerner-alpine poppy (*Papaver alpinum* subsp. *kernerii*), which is a perennial of the alpine belt; less often, it is also found at lower elevations on scree slopes or on gravel along torrents. The leaves are crowded in basal rosettes, the stems are leafless and bristly hairy; the fruit is a characteristic multi-seed capsule which opens with tiny holes under the flat striate stigma. In



Slovenia, this plant thrives in the Karavanke Mts and in the Kamniško-Savinjske Alps. It is also present in the northern part of the Balkans.

The plant acquired its name after the Austrian botanist Anton Josef Kerner von Marilaun, who was professor of systematic botany in Innsbruck and in Vienna at a later date. Kerner was also the chief editor of the renowned herbarium exsiccatum *Flora exsiccata Austro-Hungarica*, in which Carniolan (Slovenian) botanists also collaborated.

***Papaver alpinum* L. subsp. *kernerii* (Hayek) Fedde – Kerner-Alpine Poppy**

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***Papaver alpinum* L. subsp. *rhaeticum* (Leresche) Markgr. – Rhaetian Alpine Poppy**

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***Paris quadrifolia* L. – Herb Paris**

People living in the dark Middle Ages were convinced that they could save everybody with this plant that was bewitched by the devil. If they had berries in their pockets, which they picked between the Assumption (August 15th)

and the Nativity of Our Lady (September 8th), they were allegedly protected from plague and other infectious diseases. But in spite of its miraculous healing properties, people were afraid of this plant and did not use it very often.

The famous Italian physician Pietro Andrea Mattioli (1501-1577) wrote several comments to Dioscorides's encyclopedia *De materia medica*. Mattioli's work was a bestseller in the 16th century, with 60 editions and reprints. In it, Mattioli describes several medicinal plants. He wrote the following about this species:

"Many people say that these berries evoke sleep in you if eaten. I myself am not going to do so, for they could evoke eternal sleep instead."

This plant has an underground horizontal rhizome, while the stem is 30 cm tall and bears a single whorl of 4 oval, sharp-pointed, to 10 cm long, reticulately veined leaves. The stem bears a single, radially symmetrical flower, with greenish outer tepals and yellowish-white inner tepals. The fruit is an approximately 1 cm wide blue berry, which contains saponin glycosides and is highly toxic. This species is a rare exception among monocotyledons, given that it has reticulately veined leaves and flowers with 4 tepals.

The general distribution encompasses almost the whole of Europe, Asia Minor and Siberia. In Slovenia it inhabits shady, damp forests.

The generic name was supposed to refer to the symmetric arrangement of the leaves and flower parts (*par* = equal); according to a mythological interpretation, however, this name is after the Trojan prince Paris: the blue berry is the apple, while the four leaves are the Goddesses Hera, Athena, Aphrodite, plus Prince Paris.



Parnassia palustris L. subsp. *palustris* – Grass of Parnassus

"Towards the end of summer, this simple but incredibly attractive heart-shaped plant occurs in meadows in very high numbers. It is irradiated by a poetic mood, and it is admired especially by flower lovers. From a basal bouquet of heart-shaped leaves, a slender little stem with a single leaf is rising. A fairly large and incredibly attractively designed star-shaped, snow-white flower opens at the top, smelling sweetly in the bright sun." This is how the grass of Parnassus was poetically described by Ferdinand Seidel in 1918 in his booklet *The Vegetation of Our Alps*.

The basal leaves are heart-shaped and long-stalked. The plant has only a single stem leaf, which is sessile, with a heart-shaped base. The flowers are solitary at the top of the stem. The perianth is double and pentamerous. The petals are white, orbicularly ovate; in front of them, five nectariferous fimbriate scales with round glands are located.

The general distribution extends throughout the Alps, but the species can be also found from northern Africa through the entire Europe to Siberia. In Slovenia, it grows in wet meadows and marshes from the lowlands to the uplands.

The plant was given its latin name after Mt Parnassus (2,459 m), the residence of the Muses. Before the Linnean binomials were established, this plant was called *Gramen Parnassi* – Parnassus grass. There are not many folk names in Slovenia.

An interesting text about the grass of Parnassus (in Slovenian folk language known as 'Christ's shirts'), written by Darinka Soban in connection with Tavčar's novel *The Flowers in Autumn*, was published by the journal *Proteus* in 1992. The "white star of Christ's shirt", which glittered on the chest of Meta, the main protagonist, consisted of waxy white flowers of the grass of Parnassus. In the well-known TV serial based on this novel, however, Meta presses against her breast the pale purple Meadow Saffron! And this in spite of the fact that Tavčar clearly wrote:

"Something white was blossoming nearby."

The Grass of Parnassus is a harbinger of autumn not only in the eternal circle of nature, but symbolically as well:

"I'm the same as this thing: now it blossoms before the winter, and what shall come of it? The flower drops of and there'll be nothing of it ..."



Physoplexis comosa (L.) Schur – Tufted horned Rampion

"The tufted rampion is one of the most glittering plants of our Alpine flora. And we often speculate in vain how such a flowering beauty can spring up from live rock," wondered Tone Wraber in Luka Pintar's work *The Flowers of Slovenia*.

The tufted rampion is a relict of the Tertiary flora which in the Alps prospered prior to the Ice Age. In Slovenia, we can find it in rock crevices in the montane belt of the Julian Alps in the Koritnica Valley, on the slopes of Mt Mangrt, Ruševa glava and Loška stena, in the Možnica Valley, at Beli potok below Kriški podi, at Vrata, and below Mt Stenar. The only site in the Karavanke Mts is in the Belca Valley below Mt Kepa.

The egeneral distribution extends to the southern calcareous Alps from Lake



Como in Italy to the Julian Alps and the Western Karavanke Mts, whereas to the north it can be also found in Austrian Carinthia and Tyrol.

***Potentilla erecta* (L.) Raeusch. – Common Tormentil**

“When the Mother of God ran with God’s child to Egypt, Jesus fell seriously ill. They were in the middle of the desert and no medicine was to be found. In desperation, his mother picked a tiny flower and held it out to the child. “Chew it, and you’ll feel better,” she said. And the sickness indeed subsided soon. As the Mother of God told him to chew this flower, it is still called ‘Mary’s morsel’ today.

This legend has been preserved in the rich treasury of folk tradition and tells us how the plant acquired its Slovenian name “the power of heart” or Mary’s morsel. This is a perennial herb, 10–40 cm tall, with a hairy stem bearing palmately divided leaves and yellow flowers with four free petals. The rhizome is 3 cm thick, red inside, and contains much tannin. The plant grows in acidified meadows, heathlands, marshes and forests of Eurasia.

In folk medicine, it is known as a remedy for stomach and intestinal problems and was also used for gargling. How highly appreciated the plant was in former times, is testified by the name “the root of Virgin Mary”. One of the many Slovenian names is also “the power of blood”: when the root is scraped, a red sap that looks like blood trickles out of it.

The rhizome is short, and in some places the plant is also called “rotten or bloody root”: the middle, strongest root looks like being bitten off, while other marginal roots are small and thin. It is said that the main root was bitten off by a fiend. He did so in order to prevent people getting cured. But it is still growing, because small roots are created around the main root, preventing the plant from being suppressed.”



***Primula auricula* L. – Bear’s Ear**

This plant is known in our country as ‘St. Peter’s key’ and under several other folk names as well. The bright yellow flowers have a fragrant smell; the leaves, arranged in a basal rosette, have a cartilaginous margin and are covered with a floury dusting beneath.

The bear’s ear has a wide ecological range, thriving especially in rocky terrains of our Alps and their foremountains. In the Zasavje region, on the edge of Trnovski forest and elsewhere in low-lying places, it is an Ice Age relict. The lowest site of this plant in Slovenia is at Škocjan Caves.

The bear’s ear is a protected species.



***Primula carniolica* Jacq. – Carniolan Primrose**

“On the way up, you may come across this graceful and fabulously beautiful primrose, a hybrid between the two noblest primrose species of our Alps, so remarkably invented by the mountains around Idrija.” So wrote Julius Kugy in his work *From Yesteryear*.

At some sites, the Carniolan primrose prospers together with the bear’s ear, which is the reason why an interesting hybrid can be found there - Idrija Primula (*Primula x venusta*). Some of the hybrids look more like the Carniolan primrose, others more like the bear’s ear. The most attractive form of flowers and the prettiest colour can be seen in the plants that have inherited the properties of both parents to about the same extent. They resemble the bear’s ear in the characteristically floury leaves and the Carniolan primrose in the reddish and pleasantly scented flowers.

In nature, an encounter with the Idrija Primula is fairly uncommon. At the end of April, it starts to bloom in our oldest botanical garden, Juliana in the Trenta Valley. Here it propagates very successfully, and Jože Bavcon, the Head of Botanical Garden in Ljubljana, where seeds from Juliana are sent, was interested whether the seeds perhaps germinated as well. A few years ago they sowed a few of them, some of them germinated and one of the little plants came into blossom indeed!



***Primula farinosa* L. – Bird's-eye Primrose**

This is one of the ten primrose species thriving in Slovenia.

The leaves are arranged in a basal rosette, the edges of young leaves being folded down. They are green above and have

a characteristic white, floury covering beneath, which is why the plant acquired its Latin (as well as the English and Slovenian) name. The pink flowers with a yellow throat are arranged in an umbel.

The species grows in wet meadows and marshes from the lowlands to the montane belt, most often in the Alpine area. The general distribution is arctic-alpine.



***Pulsatilla alpina* (L.) Delarbre subsp. *alpina* – Alpine Pasque Flower**

The genus *Pulsatilla* is related to the anemones, but differs from them by its fruit: the necks of fertilized ovaries extend a great deal and become covered by hairs, developing into the characteristic “broom” of hairy little fruits. The hairs help it in the dissemination.

The Alpine Pasque Flower usually has white flowers, but the outer tepals can also be slightly violet or reddish.

In Slovenia, the plant can be found in rocky grasslands on limestone bedrock in the Julian and Kamniško-Savinjske Alps, the Karavanke Mts and Mt Snežnik. The general distribution extends in the southern Alps and the northwestern Dinarides.



***Ranunculus seguieri* Vill. subsp. *seguieri* – Seguer’s Buttercup**

Two hired plant collectors brought this white-flowered buttercup from Mali Stol (Vajnež) to the botanist Baron Karel Zois. He, in turn, sent the live plant, together with soil, to the naturalist F. K. Wulfen in Klagenfurt, who wrote in 1790 that Seguer’s buttercup prospers in Carniola as well.

The species can be found on damp and rocky grassy slopes, in rock crevices and on scree in the Alpine belt and occurs in the Western and Eastern Alps, Lombardy and the central Apennines. In Slovenia, it occurs only at two sites in the Karavanke Mts; the site at Vajnež has been known since more than two centuries, while after World War II the species was discovered on Begunjščica Mt as well.



***Rhaponticoides alpina* (L.) M.V. Agab. & Greuter – Alpine Knapweed**

The genus *Centaurea* could be called ‘centaur herb’, as it acquired its name from the Centaur Chiron, the horse with a human torso and a human head. In antiquity, several medicinal plants were called with this term, because Greek mythology says that Chiron was a skillful physician and a miraculous healer.

Slovenia is inhabited by 24 *Centaurea* species. The rarest among them is the alpine knapweed which, however, would be searched for in vain in our Alps in spite of its name.

In the Reports of the Museum Society for Carniola (Mittheilungen des Musealvereins für Krain) from 1866 we can read that Baron Nikomed Rastern donated to the Provincial Museum a dry specimen of the alpine knapweed, collected by him on Mt Čaven above Ajdovščina. At that time, the species was new to Carniola and the Primorje region.

Baron Rastern (1806-1875), who lived at Češenik above Dob near Domžale, was an amateur botanist. He established a relatively comprehensive herbarium, which is now kept at the Slovenian Museum of Natural History and contains, among other species, an alpine knapweed collected by him on July 13th 1866. The Museum also keeps an “older” specimen of this plant, found by the Trieste botanist Muzio de’ Tommasini “on the eastern slope of the hill some 60 metres above the village of Merče, which is situated between the karst train stations of Sežana and Divača.”

The Alpine Knapweed can be easily distinguished from other species of the genus. It is 40-100 cm tall and has blue-green, dissected leaves. The pale yellow flowers are gathered in heads; the middle involucral bracts, without appendages, have a leathery margin.

In Slovenia, this plant can be found in open karst forests, on rocky terrains and on scree in the vicinity of Sežana (Merče, Povirska gora, Tabor), as well as on the edge of Trnovski gozd on Mt Čaven.

The general distribution extends to the southern edge of the Alps, with scattered occurrences in Spain, Italy, Slovenia, Bosnia, Herzegovina and Serbia.



Rhodiola rosea L. – Roseroot

The genus *Rhodiola* acquired its name after the rhizome, which smells of roses. *Rhodiola* is a diminutive of the Greek word *rhodon*, which means pomegranate or rose.

In Slovenia, the roseroot can be found in the Karavanke Mts, Julian and Kamniško-Savinjske Alps, and on Mt Porezen in the prealpine region. The general distribution extends to the Pyrenees, Alps, Vosges, Sudeten, Carpathians, Scandinavia, Ural, Himalayas, Japan, and the Arctic regions of Asia and North America.



Rhododendron hirsutum L. – Hairy Alpenrose

“The most glorious jewel in the Dwarf Pine zone are the red glowing flowers of the celebrated champion of our Alpine flora ... The flowering rhododendron is the beauty of all beauties in the Alpine vegetation. The flaming redness of the lush flowers glows far above the lively green leaves in a unattainably effective colour contrast ...”. This is how the rhododendron was enthusiastically described in 1918 by Ferdinand Seidl in his booklet *The Vegetation of Our Alps*.

The Slovenian Alps are home to two rhododendron species. Much more common is the hairy alpenrose, a low and densely leafy little bush with short and richly ramified branches. The leaves are evergreen and hairy along the margins. The corolla is jug- or bell-shaped, light red, hairy inside. The species thrives in the dwarf pine zone and in open subalpine forests on calcareous soils. The general distribution extends into the Eastern and Central Alps and the mountains of the Balkans. In Slovenia, it is most common in the Alps, but it can be also found in valleys, where it has survived as an Ice Age relict.

As the hairy alpenrose is one of the Alpine plants that used to be a must in every bouquet of mountain flowers, the collectors of folk names managed to obtain numerous terms for this plant all over Slovenia.



Rhododendron luteum Sweet – Common (Yellow) Azalea

Slovenia is home to three *Rhododendron* species. The hairy alpenrose (*Rhododendron hirsutum*) and the rusty-leaved alpenrose (*Rhododendron ferrugineum*) are red-flowered Alpine species. Much more unusual, however, is the yellow azalea, about which our prominent botanist Tone Wraber wrote that this is “in all respects a very noble plant.”

The yellow azalea is endowed with bright yellow and very fragrant flowers. It is a usually more than one metre high bush, which sheds the leaves in autumn. In our country it was found for the first time as late as after World War II, attracting a lot of attention among botanists. Although the opinion prevailed that it was native to Slovenia, it has not been clarified as yet whether it is a relict from the Tertiary or had settled here only after the Ice Age.

The yellow azalea prospers in acidified deciduous forests in the vicinity of Ljubljana, Boštanj and Brusnice near Novo mesto.

The general distribution extends in eastern Europe, Asia Minor and in the Caucasus. Of its localities in Asia Minor and in the Caucasus we are reminded by its other name, ‘Pontic azalea’.

In the Juliana Botanical Garden it was planted for the first time by Prof Ciril Jeglič in the 1960s. Later on, however, the bush fell to ruin. We planted it anew, and when almost dry it began to bud again and came into bloom.



Salvia glutinosa L. – Sticky Clary

This plant is a member of the family Lamiaceae, formerly Labiatae, named so after the two-lipped corolla. The flowers are bilaterally symmetrical, and the corolla is divided into an upper and lower lip.

The sticky sage derives its name after its sticky calyx and stem, which are covered by thick glandular hairs. The corolla is pale yellow, the upper lip hood- or sickle-shaped, the lower lip with reddish brown spots and stripes.

The species can be found in forests, on forest edges, amongst tall herbs and on embankments from the lowlands to the montane belt all over Slovenia. Its general distribution extends to central and southern Europe, reaching towards the east as far as the Himalayas.



Satureja montana L. subsp. *variegata* (Host) P.W. Ball – Karst Savory

This plant is a low little bush with much essential oil. The stem, almost round in cross-section, is covered with short hairs and bears many glandularly-spotted leaves. The corolla is mostly pink. This flower is an important source of nectar for the bees. It starts to bloom in late summer and autumn.

It grows in the Julian Alps, on the western margins of the Dinaric region, in the western part of the prealpine region, in the southern part of the predinaric region and in the submediterranean region. The general distribution extends to the northwestern part of the Balkans.



Satureja subspicata Bartl. ex Vis. subsp. *liburnica* Šilic – Liburnian Savory

This plant is a low little bush containing much essential oil. Its four-edged stem bears leaves which are scatteredly glandular-spotted beneath. The corolla is purple with darker spots at the mouth.

The species can be found in karst woodlands and rock crevices in the hilly and montane belts of the Dinaric region, on the southern margin of the prealpine and predinaric regions, and in the submediterranean region. Generally, the plant is distributed from southern Velebit Mts to Trnovski gozd and Menišja Mt.

This flower is an important source of nectar for the bees. In the Juliana Botanical Garden it blossoms from the end of August to September.



Saxifraga crustata Vest – Encrusted Saxifrage

As far as ecological and geographical diversity are concerned, the genus *Saxifraga* is one of the champions in the plant world. The generic name derives from Latin, *saxum* meaning a rock, *frangere* meaning 'to break'. The natural habitats of many saxifrage species are rock crevices; the roots of these plants literally "break rocks apart". In the 16th and 17th centuries, the meadow saxifrage was used as a medicine for the removal of bladder and kidney stones.

The encrusted saxifrage is one of the commonest species in rock crevices in the mountains. The leaves, arranged in a dense basal rosette are rimmed by white crusts of calcium carbonate secreted in the shape of little scales by small glands. The white flowers are grouped in racemes.

In Slovenia, the plant thrives in rock crevices, on scree and in rocky grasslands in the Julian and Kamniško –Savinjske Alps, Karavanke Mts, Mt Ratitovec, Dinarides and Čičarija. The general distribution extends in the eastern Alps and Dinarides from NE Italy south to Montenegro.



Saxifraga hostii Tausch subsp. *hostii* – Host's Saxifrage

This saxifrage species is much taller than the encrusted saxifrage, reaching up to 60 cm. The margin of the leaves is covered by glands which secrete calcium carbonate. The flowers are milky white to creamy yellow, often with purple dots.

The species mainly grows in the dwarf pine zone of the Alps. Outside the Alps, it can be found here and there as an Ice Age relict (e.g. at Falska peč above the Drava River at an altitude of 290 m). The general distribution extends along the southern and eastern calcareous Alps (to the west reaching as far as Lake Como, to the east to the Karavanke mountain range).

The species is dedicated to the Viennese botanist N. T. Host, with whom our Franc Hladnik used to collaborate. Host wrote a review on Austrian vegetation, including also data from Carniola (former Slovenia).



Scabiosa hladnikiana Host – Hladnik's Scabious

The leading Carniolan botanist of the first half of the 19th century was Franc Hladnik, who founded the Botanical Garden Ljubljana in 1810 and established a comprehensive herbarium, now kept by the Slovenian Museum of Natural

History. He regularly sent the new species to his botanical friends and mentors to Klagenfurt, Vienna and Leipzig. One of such plants was a *Scabiosa* species, which he duly forwarded to the botanist N. T. Host in Vienna from the Polhograjski Dolomiti. Host described it and named it after its founder. He did not know, however, its exact locality, but merely wrote that the plant's natural habitat are Carniolan mountains and Alpine basins.

The typical locality of *Scabiosa hladnikiana* is Goljek Hill in Polhograjski Dolomiti. The plant was found there by the botanist Alfonz Paulin, who wrote that he gathered it at its typical locality.

The plant reaches up to 1m in height, its stem leaves are softly stellately hairy, lyrate, with a large and distinct terminal lobe, while the lateral lobes are often absent. The globose inflorescences with bluish-purple flowers are surrounded by involucral bracts. The species prospers in warm localities, meadows, scrublands and in open forests from the lowlands to the montane belt in the Dinaric, prealpine and predinaric regions (Polhograjski Mts, Idrijsko, Zasavje, along the lower course of the Savinja River and on the Slovenian and Croatian sides of Gorjanci Mts).

The species carrying Franc Hladnik's name is one of the ca. 70 plants which are endemic to Slovenia.



Scopolia carniolica Jacq. – Nightshade-leaved Henbane or Henbane Bell

As long ago as in 1550, the famous Italian physician P. A. Mattioli found a plant on Mt Sabotin above Solkan that reminded him of the toxic belladonna. Considerable time thereafter, the plant was named after the renowned naturalist I. A. Scopoli and the former province of Carniola.

In Slovenia, the common scopolia thrives in beech forests and in wet gorges. The general distribution extends to southeastern Europe, while its near relatives can be found only in Asia.

An extremely rare and endemic form of the common scopolia was found in the forests around Turjak by the botanist Franc Hladnik and eventually named after him as Hladnik's Scopolia (*Scopolia carniolica* f. *hladnikiana*); it differs from the common scopolia in the colour of flowers, which are greenish-yellow both inside and outside. This form has only a few sites: Kolovec near Kamnik, below Mt Lubnik near Škofja Loka, the Idrija Valley, and above Borovniški Pekel.



Telekia speciosa (Schreb.) Baumg. – Great Yellow Ox-eye

"The most splendid *Telekia*, just like a sunflower," fascinated Julius Kugy during his stay in Juliania.

The great yellow ox-eye is distributed in the eastern Carpathians, the Balkans, Asia Minor and the Caucasus; to the west it reaches to Slovenia, where it is indigenous in the Dinaric, predinaric and submediterranean regions. It was introduced or is subsontaneous in the Alpine and prealpine regions. In places, it is planted as an ornamental plant in gardens, from where it may escape into the wild.

The largest indigenous sites of this plant in Slovenia are on forest edges and clearings at Snežniška planota. It seems unusual, however, that it can also be found at the Savica in the Bohinj Corner; it was most probably brought there by soldiers during World War I with hay transported by a military ropeway to Mt Komna.



Trollius europaeus L. subsp. *europaeus* – Globeflower

The plants that are medicinal, edible, useful, toxic, harmful or just simply beautiful have several folk names. One of such graceful, although toxic, plants is the globeflower. The famous naturalist and museum custodian Henrik Freyer, for example, used the word "mountain flower" for it more than 150 years ago, while in the area of Jesenice it was known as "golden apple" ... The botanist Fran Jesenko, on the other hand, found it similar to a sleigh bell.

And where does its scientific name come from? In one of his works, the Swiss physician and naturalist Conrad Gesner (1516-1565) wrote this name as *Trollblum* (probably meaning "spherical flower"). The physician Johann Bauhin (1541-1613), on the other hand, "translated" this term into Latin as *Trollius flos*.



This perennial herb is hairless, 30-60 cm tall, with a mostly unbranched stem. The leaves are palmately divided into five to seven lobes. The stem is usually monofloral.

“The large, bright flower is almost round and has 10-15 extensive convex sepals, which conceal the inner parts. There are 5-20 petals; they are elongated and insignificant in comparison with sepals, with a shallow depression near the bottom, in which honey is accumulated.”

So wrote Martin Cilenšek in 1892 in his work *Our Harmful Plants in Images and Texts*.

Globeflowers are distributed in Europe, in the Caucasus and Arctic North America. In Slovenia, they can be found in rocky wet grasslands, among shrubs, in damp open forests and on scree from the montane to the subalpine belts of the Alpine and prealpine region and on Mt Snežnik.

***Valeriana tripteris* L. subsp. *austriaca* E. Walther – Three-leaved Valerian**

This plant, up to 60 cm tall and opaquely bluish green coloured has entire lower leaves and trifoliate stem leaves, which gave the plant its name. The flowers, arranged in umbrella-shaped corymbs, are mostly whitish or pink, and are pollinated by insects. The fruits are nutlets dispersed by wind.

The species can be found in forests, on rocks and scree, from the montane to the subalpine zones, all over Slovenia. The general distribution extends to the southern and central European mountains.



***Veratrum lobelianum* Bernh. – Lobel's (Green) False Hellebore**

(*Veratrum album* subsp. *lobelianum*)

This at least 50 cm high plant has wide ovate or elliptic leaves. The flowers, arranged in racemes, have 6 green or greenish yellow tepals.

It can be found in wet meadows, open forests, pastures and amongst tall herbs in the montane and subalpine belts. In Slovenia it occurs in the Alps, Mt Porezen, Mt Ratitovec, Polhograjski Mts and Trnovski gozd. The general distribution extends widely on the European mountains and in Asia.

Very similar to this species is the European white false hellebore (*Veratrum album* subsp. *album*) which, however, has white tepals and is more common in the eastern part of Slovenia (Pohorje, Snežnik).

False hellebores are highly toxic, for they contain alkaloids that cause vomiting, diarrhea, severe pains in the stomach and intestine, severe breathing difficulties and even death.



***Veratrum nigrum* L. – Black False Hellebore**

The black false helleborine is the plant with the darkest flowers in the Slovenian flora. They are reddish brown to dark brown, or even darker.

The plant is highly toxic, since it contains alkaloids. Its generic name is supposedly derived from the Latin *verus* (true, real) and *ater* (black). In the distant past, the grinded rhizomes were used as a means for sneezing, which allegedly cleared the brain and mind. When we sneeze, we confirm the truth and say: “It’s true!” This is one of the explanations, although probably a wrong one, of the Latin term!

In Slovenia, this plant is most common in the Karst, Soča valleys and in the Zasavje regions, but can also be found along Lake Bohinj.

The black false helleborine is an eastern European-Asian species, present in the southern Alpine region, Czech Republic, Hungary, Balkans, up to Siberia and Kamchatka.



***Vicia oroboides* Wulfen – Broad-leaved Vetch**

Among the especially interesting and notable Slovenian plants are also those which have the typical locality in Slovenia. The term ‘typical locality’ refers to the place where a botanist saw the plant, studied it and described it as a new species.

One of such plants is the broad-leaved vetch. In 1790 it was described by naturalist Franc Ksaver Wulfen (1728-1805),

who stated that it grew in the Carniolan mountains, claiming that he saw it on Mt Slivnica above Lake Cerknica and on Sv. Jošt above Kranj.

The plant is up to 50 cm tall and has long sharp-pointed leaves without tendrils. Yellow flowers are arranged individually or in lateral whorls with up to six flowers. The petals are sulphur yellow, the pods black.

The species inhabits deciduous (especially beech) forests from the montane to the subalpine belts all over Slovenia.

The general distribution includes the southeastern calcareous Alps from Lake Garda to the Friuli Venezia Giulia region, from the Slovenian Karst (Kras) and Julian Alps to the Lower Austria, in Croatia, Bosnia and Herzegovina, Serbia and Romania.

Although our vetch may look as nothing special at all, it reminds us every spring of the rich history of our plant research as well as of Wulfen, who was noteworthy also as a mentor to the Carniolan botanists Karl Zois and Franc Hladnik.



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