

## DESCRIPTION OF SOME SPONTANEOUS SPECIES AND THE POSSIBILITIES OF USE THEM IN THE ROCKY GARDENS

BUTA ERZSEBET<sup>1</sup>, CANTOR MARIA<sup>1</sup>, ZAHARIA DUMITRU<sup>1</sup>,  
DUMITRAȘ ADELINA<sup>1</sup>, ZAHARIA ADRIAN<sup>1</sup>, SABO GEORGETA<sup>1</sup>, BUTA MIHAI<sup>1</sup>

**Abstract:** In Romania's spontaneous flora are reported over 3759 species of plants, of which 3136 species are spontaneous [CIOCĂRLAN, 2000], 23 have been declared nature monuments, 74 are extinct, 39 endangered, 171 are vulnerable and 1253 are rare. Characteristic grassland species is approximately 37% of total existent plants in Romania, and alpine species is 14%. It was identified a total of 57 endemic taxons (species and subspecies) and 171 subendemic taxons [www.wikipedia.org]. The floristic ranges adapted to the unfavorable conditions dictated by nature, with the possibility to use in rocky gardens, are: *Campanula carpatica* Jacq., *Dianthus callizonus* Schott et Kotschy, *Gentiana acaulis* L., *Leontopodium alpinum* Cass., *Phlox amoena* Sims., *Saxifraga oppositifolia* L., *Sedum alpestre* Vill., *Sempervivum montanum* L., *Viola odorata* L. Species that grow on alpine meadows in the spring until late autumn, recommended in landscape arrangements are: *Adonis vernalis* L., *Carlina acaulis* L., *Paeonia tenuifolia* L., *Primula elatior* Hill., *Primula veris* L., species that impress through form and the chromatic variety. This paper contains a brief description of some native species used or recommended for rocky gardens.

**Key words:** decorative species, flora, spontaneous, plants characteristics

### Introduction

Rocky alpine plants are associated, usually with groups of rocks, which are caused the name of plants. These flower species are small size species, with high resistance to environmental conditions (drought), with procumbent and repent port and creeping grass growing. Generally, alpine plants keep hairy leaves and large flowers. Rarely the leaves are skinny and glossy.

The most used floral species are the medium shaped ones, with a high resistance for weather conditions (dry weather), with side poles and rug type growth. Rarely can we see plants with skinned and shiny leaves.

Rocky gardens housing weather-resistant and decorative plants, providing them natural conditions that they need to live. Generally, the flowering plants which are used in rocky gardens have a short growing season, are species that form small stems, leaves reduced in size, have high intensity colors of flowers and do not require complicated maintenance work [CANTOR & POP, 2008].

A species known and appreciated is *Adonis vernalis* L. (Pheasant's Eye, Spring Pheasant's Eye, Yellow Pheasant's Eye and False Hellebore), a xero-thermophilic survival, which has a thick rhizome in the soil, a stem 10-30 cm high, bearing leaves pinnate-side, hair-shaped and divided. Pheasant's eye have a solitary flower which appears in April in the top of the stem, with golden-yellow petals (Fig. 1).

<sup>1</sup> University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Mănăștur Street, Romania, 0264-562774 int.287, [ebuta2008@yahoo.com](mailto:ebuta2008@yahoo.com)

*Adonis vernalis* L. prefers sunny places. It can often meet in grass on steep slopes with south or south-west aspect, especially on calcareous soils. This flower rise from the plains to the mountains, the specific areas within dry grass, bathed in sunlight.

The plant is protected in some areas of the country (Suceava County). It is used more for its decorative qualities, but also for medicinal properties due to the calming effect in heart diseases [[http://www.bioterapi.ro/dictionar/index\\_botanic/](http://www.bioterapi.ro/dictionar/index_botanic/)].

***Campanula carpatica*** Jacq. (Carpathian Harebell, Tussock Bellflower), is a perennial species alpine which is forming colored flowers (white, blue or blue-lavender), solitary or grouped on a semi high stem 20-30 cm. Flowering occurs in summer. Carpathian bell grow spontaneously in the Carpathians, exhibitions prefer sunshine, but tolerate and shadow (Fig. 2).

***Carlina acaulis*** L. (Stemless carline thistle, Dwarf carline thistle, or Silver thistle), is a stem less plant. The spiny, pinnatifid leaves grow in a basal rosette approximately 20 cm in diameter. The flowers are produced in a large (up to 10 cm) flowerhead of silvery-white ray florets around a central disc [DRĂGULESCU, 1996]. The disc florets are tubular and yellow-brown in colour. To protect the pollen, the head closes in wet weather, a phenomenon folklore holds to presage forthcoming rain. The flowering time is between August and September (Fig. 3).

***Dianthus callizonus*** Schott et Kotschy (Carnation of Piatra Craiului) grow spontaneously on limestone formations of Piatra Craiului. This species was discovered over 150 years by Schott and Kotschy botanists [DRĂGULESCU, 1996], rises in a single region of the world, relatively narrow, and is a real wealth of the flora of Romania (Fig. no. 4). Grow mainly on the western slope of the massif, in alpine meadows and subalpine rocky grass and rocks. Carnation presents smooth stem, with solitary flower, 10-20 cm high. Leaves are lanceolate-linear with rough edge, often arranged as a rosette [OLTEAN-COSMA, 1967]. Flowers are red-carmine with a white-frosted circle in the center, decorated with red or pink rays (Fig. 4). Bloom in the period of July-August.

There are two endemic species in the Carpathians, *Dianthus spiculifolius* Schur. and *Dianthus tenuifolius* Schur. that are most beautiful than the famous carnation of Piatra Craiului. The first one can be used also in rocky gardens.

***Gentiana acaulis*** L. (syn. *Gentiana kochiana* E.P.Perrier & Songeon, *Gentiana excise* C. Presl) named stemless gentian, is an early spring perennial species, increased spontaneously in Retezat mountains. Genus name means "trumpet" and the species is translated as "stemless".

It is a perennial plant, growing on acidic soils. Its height is 2 cm and spread is 10 cm or more. The leaves are evergreen, 2-3.5 cm long, in a basal rosette, forming clumps. The trumpet-shaped terminal flowers have a blue colour (Fig. 5) with olive-green spotted longitudinal throats. They grow on a very short peduncle, 3-6 cm long. The flower stem is often without leaves, or has 1 or 2 pairs of leaves. It likes full sun, is fully hardy and flowers in late spring and summer.

The species is unfailing in alpine gardens and rocky gardens, is used for walls and steps floral decoration.

In Romania are growing twenty-two species of *Gentiana* L., three species from that is employed in traditional folk medicine (*G. asclepiadea* L., *G. lutea* L., *G. punctata* L.). It is used their roots, in different diseases [ARDELEAN & MOHAN, 2008].

Species appreciated and loved, which is recommended for alpine garden decor is ***Leontopodium alpinum*** Cass. (Edelweiss). The popular name comes from German edel (meaning noble) and weiss (meaning white). The scientific name, *Leontopodium*, means

“lion's paw” and is derived from the Greek words leon (lion) and podion (diminutive of pous, foot) [[www.en.wikipedia.org/wiki/Leontopodium\\_alpinum](http://www.en.wikipedia.org/wiki/Leontopodium_alpinum)]. The species, generally has a height of 5-20 cm, leaves linear-lanceolate. Leaves and flowers are covered with white hairs and appear woolly (tomentose). Flowering stalks of Edelweiss can grow to a size of 3–20 cm (in cultivation, up to 40 cm). Each bloom consisting of five to six small yellow flower heads (5 mm) surrounded by leaflets in star form. The flowers are in bloom between July and September (Fig. 6).

This species grows on limestone cliffs in alpine regions, rarely in subalpine regions. May is known as Queen's flower. In our country, this plant can be found in the Maramureş Mountains, Vrancea, Făgăraş, Retezat, Bihor, Cozia, Ceahlău, Godeanu and other mountain massive.

*Paeonia tenuifolia* L. (Steppe Peony, Fern-leaf Peony) is a rare and protected plant specific for grass areas, warm sunny south-western and south-eastern Romania's regions. As a curiosity, this lovely plant, occurs in the steppe zone, to Transylvania, at Zau de Câmpie, where there is a nature reserve created for this peony. Because of habitat protected, today, here meet most of the steppe peony specimens in our country.

Thought its interesting foliage, light green, very fine in texture; the pinnate leaves, with narrow segments linear, 1-5 mm wide (resembled those of dill) and modest size (10-30 cm, rarely 50 cm), steppe peony is easily distinguished other peonies. Blooming occurs between in the second part of April - the first decade of May (takes 10 days). Flowers are about 2 to 3 inches in diameter, single, with 5 to 10 petals of satiny blood red to deep crimson, with a showy cluster of yellow anthers in the centre. The flower is semi-cupped and upwards-facing, one per stem (Fig. 7).

Cowslip (*Primula veris* L. syn. *Primula officinalis* Hill.) is the most common species of the genus; it is a low growing herbaceous perennial plant with a rosette of leaves 5-15 cm long and 2-6 cm broad. The golden yellow flowers with campanulated calyx are produced in the spring between April and May; they are in clusters of 10-30 together on a single stem 5-20 cm tall, each flower 9-15 mm broad. Red-flowered plants do occur, very rarely. In the soil has a cylindrical rhizome (Fig. 8).

All parts of plant (rhizome, leaves and flowers) are useful in traditional medicine [ARDELEAN & MOHAN, 2008].

It may be confused with the closely related *Primula elatior* Hill. (oxlip) which has a similar general appearance although the oxlip has larger, pale yellow flowers more like a primrose, and a corolla tube without folds.

*Primula elatior* Hill. (True Oxlip) is an herbaceous perennial plant, found in nutrient-and calcium-rich damp woods and meadows. The species has an oblique rhizome, strong, and a high stem of 10-30 cm, ovate leaves arranged in rosettes. Decorate with bright yellow flowers and a corolla tube without folds, arranged in a cluster with 10-12 small flowers (Fig. 9). *Primula elatior* Hill. blooms in March-May.

In Romania are growing 12 species of primrose, most of them occur in restricted areas or even are floral rarities. The most rarely is *Primula baumgarteniana* Degen et Moesz, named after J. Ch. G. Baumgarten, a botanist who wrote and published the first comprehensive book about Transylvanian flora.

Today this primrose is called *Primula wulfeniana* Schott subsp. *baumgarteniana* (Degen & Moesz) Ludi [[http://untreaty.un.org/unts/120001\\_144071/26/8/00021909.pdf](http://untreaty.un.org/unts/120001_144071/26/8/00021909.pdf)].

*Saxifraga oppositifolia* L. (Purple Saxifrage or Purple Mountain Saxifrage) grow spontaneously on rocky places from Ciucaş, Maramureşului, Rodnei, Ceahlău, Piatra Mare, Postăvaru, Bucegi, Piatra Craiului, Făgăraş, Parâng, Retezat [<http://muntiiarpati.org/>]. It is

a low-growing, densely or loosely matted plant growing to 3–5 cm high, with somewhat woody branches of creeping or trailing habit close to the surface. The leaves are small, rounded, scale-like, opposite in 4 rows, with ciliated margins. The flowers are solitary on short stalks, petals purple or lilac, much longer than the calyx lobes, red at first, then pass in purple (Fig. 10). Bloom in early spring and take until late summer, especially in cool areas. This species grows and develops well at altitudes above 1000 m.

It is a popular plant in alpine gardens, though difficult to grow in warm climates.

From among the succulent species with evergreen leaves, are *Sedum alpestre* Vill. (Stone Crop) and *Sempervivum montanum* L. (Houseleeks or Liveforever), two species commonly used in rocky gardens, floral walls.

Stone crop (Fig. 11) has a size of 5-8 cm, with ascending stem and many small succulent, linear-cylindrical leaves, with both sides nearly flat, forming decorative carpets. The plants have water-storing leaves. This species has golden yellow flowers, with narrow petals, arranged in terminal cluster [PRODAN & BUIA, 1961]. The flowering period is July-August. Stone crop grows spontaneously on the cliffs in the mountainous and alpine region of Carpathian Mountains.

Houseleek (Fig. 12) is a perennial, small sized (5-15 cm) plant, with delicate appearance. The name "*Sempervivum*" has its origin in the Latin *Semper* ("always") and *vivus* ("living"). *Sempervivum* are called "always living" because this perennial plant keeps its leaves in winter and is very resistant to difficult conditions of growth. The plant has a rosette appearance, made up from succulent and fleshy green leaves. The flower is like a star, pink-purple, arranged in terminal clusters that occur in July-August. Species decorate mainly by leaves. After flowering, the plant dies, usually leaving many offsets it has produced during its life.

In the World there are about 500 species of violet (*Viola* L.), from that in Romania grown over 30 (and 20 hybrids). The most common species is *Viola odorata* L. (Sweet Violet, English Violet, Common Violet, or Garden Violet), called because of its fragrance. This species grows through the bushes, in meadows and forest edges, on the plains and hills. The leaves are cordate, oval or ovate, 1.5-3 cm in diameter; flowers consist in 5 purple-closed petals, rarely whitish with spur. The species blooms from March to April.

Due to remarkable appearance of a rocky or alpine gardens make time to get other connotations. It can provide, while a healthy atmosphere and they offer relaxing spaces. The necessary elements such as gravel and rocks with flower plants reproduce in miniature the natural environment of mountain areas.

## References

1. ARDELEAN A. & MOHAN GH. 2008. *Flora medicinală a României*. București: Edit. ALL.
2. CANTOR M. & POP IOANA. 2008. *Floricultură-Baza de date*. Cluj-Napoca: Edit. Todesco.
3. CIOCĂRLAN V. 2000. *Flora ilustrată a României, Pterydofita et Spermatophyta*. București: Edit. Ceres.
4. DRĂGULESCU C. 1996. *Vademecum ecologic - Oameni și flori*. București: Edit. Ceres.
5. OLTEAN - COSMA C. 1967. *Nestemate ale naturii din România*. Cluj-Napoca: Edit. Casa Cărții de Știință.
6. PRODAN I. & BUIA AI. 1961. *Flora mică ilustrată a Republicii Populare Române*. București: Edit. Agrosilvică.
7. [www.images.google.com/imgres](http://www.images.google.com/imgres)
8. [http://www.bioterapi.ro/dictionar/index\\_botanic/](http://www.bioterapi.ro/dictionar/index_botanic/)
9. [www.en.wikipedia.org/wiki/Leontopodium\\_alpinum](http://www.en.wikipedia.org/wiki/Leontopodium_alpinum)
10. [http://untreaty.un.org/unts/120001\\_144071/26/8/00021909.pdf](http://untreaty.un.org/unts/120001_144071/26/8/00021909.pdf)
11. <http://muntiiicarpati.org/>
12. [www.wikipedia.org](http://www.wikipedia.org)



**Fig. 1.** *Adonis vernalis*



**Fig. 2.** *Campanula carpatica*



**Fig. 3.** *Carlina acaulis*



**Fig. 4.** *Dianthus callizonus*



**Fig. 5.** *Gentiana acaulis*







**Fig. 6.** *Leontopodium alpinum*



**Fig. 7.** *Paeonia tenuifolia*



**Fig. 8.** *Primula veris*



**Fig. 9.** *Primula elatior*



**Fig. 10.** *Saxifraga oppositifolia*



**Fig. 11.** *Sedum alpestre*



**Fig. 12.** *Sempervivum montanum*