CHOROLOGICAL STUDIES OF SOME MEDICINAL PLANTS FROM SOZOLOGICAL CATEGORIES OF THE MOUNTAIN FLORA OF ARGEŞ COUNTY

ALEXIU Valeriu

Abstract. Reported to the number of higher plants of the Romanian flora, in Argeş County, there grow a significant number of plants with medicinal properties. The flora of Arges County is represented by 2009 species; 411 species are included in different sozological categories, 23 of the species with medicinal properties being grouped in five categories of the Red List: Vulnerable (7), Near Threatened (12), Least Concern (1), Critically Endangered (1) and Data Deficient (1).

Keywords: chorological, sozological, Argeş county.

Rezumat. Studiu corologic al unor plante medicinale din categorii sozologice în flora munţilor judeţului Argeş. Raportat la numărul speciilor de plante superioare din flora Romaniei, în judeţul Argeş există un număr semnificativ de plante cu proprietăţi medicinale. Flora judeţului Argeş numără 2009 specii superioare, 411 sunt incluse în diferite categorii sozologice, iar dintre acestea, 23 specii cu proprietăţi oficinale sunt distribuite în cinci categorii sozologice: vulnerabile (7), aproape ameninţate (12), cu risc scăzut de dispariţie (1), critic periclitate (1) şi insuficient cunoscute (1).

Cuvinte cheie: corologic, sozologic, judeţul Argeş.

INTRODUCTION

Based on the estimated number of the Romanian Flora - 3759 species and subspecies of higher plants (CIOCÂRLAN, 2009), a significant amount of medicinal plants grows in Argeş County. The information from the literature and personal researches in the field has shown the existence of 2009 species and subspecies in the Făgăraş Mountains in Argeş County. All these taxonomic categories belong to 584 genera and 144 botanical families. Among these species and subspecies, 411 are included in the following categories of the Red List: rare, vulnerable, endemic to Romania, endemic to Romania but not endangered, species having rare European specific spreading area, species having endangered European specific spreading area (IUCN Red List, Habitats Directive Annex IIb, IVb and Bern Convention - App I). The results of this paper regarding chorology, ecology and medicinal proprieties of the studied species offer useful information concerning the biodiversity, conservation and possibilities for economic and medicinal exploitation.

MATERIAL AND METHODS

The establishment of the protected plants was made by: BOŞCAIU *et al.,* 1994; DIHORU & DIHORU, 1994, OLTEAN *et al.,* 1994; OPREA, 2005; ALEXIU, 2008 and DIHORU & NEGREAN, 2009.

The **IUCN Red List of Threatened Species** (also known as the **IUCN Red List** or **Red Data List**) is the world's most comprehensive inventory of the global conservation status of plant and animal species. The International Union for the Conservation of Nature and Natural Resources (IUCN) is the world's main authority on the conservation status of species. A series of Regional Red Lists are produced by countries or organizations, which assess the risk of extinction to species within a political management unit.

Species are classified in nine groups, set through criteria such as rate of decline, population size, area of geographic distribution, and degree of population and distribution fragmentation.

1. Extinct (EX) - No individuals remaining.
2. Extinct in the Wild (EW) - Known only to survive in captivity, or as a naturalized population outside its historic range.
3. Critically Endangered (CR) - Extremely high risk of extinction in the wild.
4. Endangered (EN) - High risk of extinction in the wild.
5. Vulnerable (VU) - High risk of endangerment in the wild.
6. Near Threatened (NT) - Likely to become endangered in the near future.
7. Least Concern (LC) - Lowest risk. Does not qualify for a more at risk category. Widespread and abundant taxa are included in this category.
8. Data Deficient (DD) - Not enough data to make an assessment of its risk of extinction.
9. Not Evaluated (NE) - Has not yet been evaluated against the criteria

RESULTS AND DISCUSSIONS

Categories of vulnerable (VU) and critically endangered plants (CR) are represented, in Argeş, by the following species: *Angelica archangelica* L., *Arnica montana* L., *Galanthus nivalis* L., *Gentiana lutea* L., *Gentiana*

punctata L., *Leontopodium alpinum* CASS., *Narcissus poëticus* L. ssp. *radiiflorus* (SALISB.) BAKER and *Rhododendron myrtifolium* SCHOTT ET KOTSCHY. IUCN category, the family, frequency in Arges county, therapeutic properties are presented in Table 1. For conservation, it is recommended banning their collection.

Table 1. IUCN categories of medicinal flora in Argeş County and their therapeutic properties.
Tabel 1. Categoriile IUCN de floră medicinală în judeţul Argeş şi proprietăţile lor terapeutice.

Family	Species	Frequency in Argeş county	IUCN Category	Phytotherapy
Apiaceae	*Angelica archangelica* L.	Occasionally	VU	Angelica contains a variety of chemicals which have been shown to have medicinal properties. Chewing on angelica or drinking tea brewed from it will cause local anaesthesia, but it will heighten the consumer's immune system. It has been shown to be effective against various bacteria, fungal infections and even viral infections (NĂDĂŞAN, 2003)
	Syn.: *Archangelica officinalis* HOFFM. Family: Asteraceae Vernacular: Angelică; Anghelică; Anghelină; Buceniş; Buciniş; Cucută mare. Geographical Distribution: Eua-bor IUCN Category: VU Located in Argeş: Râiosu-Buda Massif: Buda Valley, Iezer-Păpuşa Massif: Bătrâna Valley, Iezer Valley, Leaota Mountains: Marginea Domnească (The edge of the Royal), Bădenilor Valley, Făgăraş Massif: Zârna Valley.			
Ericaceae	*Rhododendron myrtifolium* SCHOTT ET KOTSCHY	Occasionally	VU	Anti-inflammatory and hepatoprotective functions against related diseases, which is probably due to its anti-oxidant efficacy sourced from flavonoids, saponins and phenolic compounds (BOJOR, 2003)
	Syn.: *Rhododendron kotschyi* SIMONK.; *Rhododendron ferrugineum* L. subsp. *kotschyi* (SIMONK.) HAYEK Family: Ericaceae Vernacular: Bujor de munte; Smârdar; Perişoare; Popdele; Tulpin, Vase munte. Geographical Distribution: Carp-Balc IUCN Category: VU Located in Argeş: Massif Râiosu-Buda, Massif Piatra Craiului, Massif Iezer-Păpuşa: Păpuşa, Portăreasa, Şeţu, Ţefeleica, Mâra Mică, Tărâţoasa Mountains, Huluba Peak, Curmătura Groapelor, Iezerul Mare, Iezer Valley, Bătrâna Peak, Lespezi, Căţunu Valley, Andrew's teeth, Bătrâna by Colţi, Leaota Mountains: Tâncava, Românescu, Leaota Peak.			
Gentianaceae	*Gentiana lutea* L.	Occasionally	CR	The root is anthelmintic, anti-inflammatory, antiseptic, biter tonic, emmenagogue, cholagogue, febrifuge, refrigerant and stomachic. It is taken internally in the treatment of liver complaints, indigestion, gastric infections and anorexia (CHIEJ, 1984)
	Family: Gentianaceae Vernacular: Ghinţură galbenă Geographical Distribution: Alp-Carp IUCN Category: VU Located in Argeş: Făgăraş Massif, Ghimbav Massif, Piatra Craiului Massif: Dâmbovicioara Gorges.			
	Gentiana punctata L.	Occasionally	VU	Anthelmintic, stimulates gastric secretion, stimulates bile secretion, tonic, anti-pyretic, stimulating appetite (BOJOR, 2003)
	Family: Gentianaceae Vernacular: Enţură, Ghinţură pătată, Ochincea. Geographical Distribution: Alp-Carp IUCN Category: VU Located in Argeş: Râiosu-Buda Massif, Iezer-Păpuşa Massif: M. Căţunu, Valley Iezer, Făgăraş Massif: Negoiu Peak, "Capra Budei".			
Asteraceae	*Arnica montana* L.	Relativ Occasionally	VU	An antiseptic ointment is used to treat wounds, bruises and inflammation. It contains the toxin helenalin, which can be poisonous if large amounts of the plant are eaten. The roots contain derivatives of thymol, which are used as fungicides and preservatives and may have some anti-inflammatory effect (BOJOR, 2003).

	Family: Asteraceae Geographical Distribution: Eur Frequency in Romania: Relatively Occasionally IUCN Category: VU Located in Argeş: Piatra Craiului Massif: Dâmbovicioarei Gorges, Brusturetului Gorges, Ghimbav Mountains: Cheii Gorges, Great Gorge of the Dambovița, Iezer-Păpuşa Massif: Andrew's teeth			
	Leontopodium alpinum CASS.	Occasionally	VU	In the scientific literature one can find evidence for pharmacological and cosmetic properties: anti-inflammatory properties, anti-bacterial properties, Anti-inflammatory and analgesic and anti-swelling properties in vivo (animal experiments), sun protection (DOBNER et al., 2004).
	Syn.: *Antennaria leontopodium* (L.) GAERTN. Family: Asteraceae Vernacular: Albumeală; Albumiță; Floare de colț; Floare de coți; Floare de stâncă; Floare domească; Floarea reginei; Flocoşele; Linărică; Mucezea; Prescurele; Semenic; Studeliţe; Talpa mâţei. Geographical Distribution: Eua IUCN Category: VU Located in Argeş: Râiosu-Buda Massif, Ghimbav Mountains: Cheiţei Gorges, Great Gorges of the Dambovita, Piatra Craiului Massif: Dâmbovicioarei Gorges, Brusturetului Gorges, Marele Grohotiş (Grand detritus), Făgăraş Massif: "Capra Budei", Piciorul Caprei, Negoiu.			
Amaryllidaceae	*Galanthus nivalis* L.	Frequent	VU	An active substance in snowdrop is called galantamine, which, as anticholinesterase, can act as an antidote to poisons. Galantamine (or galanthamine) can be helpful in the treatment of Alzheimer's disease, though it is not a cure (PÂRVU, 2000).
	Family: Amaryllidaceae Vernacular: Ghiocei, Aişoare, Cloconei, Clocoţei de omăt, Ghiorele, Luşte, Primăvăruţă. Geographical Distribution: Eur IUCN Category: VU Located in Argeş: Râiosu-Buda Massif, Budei Valley, Piatra Craiului Massif: Dâmbovicioarei Gorges, Brusturetului Gorges, Dragoslovenilor Valley, Ghimbav Mountains: Great Gorges of the Dâmboviţa.			
	Narcissus poëticus L. ssp. *radiiflorus* (SALISB.) BAKER	Occasionally	VU	Pharmaceutical action: flowers have soothing properties, soothing, emollient, disinfectant, antiseptic lung. You can use it for the following disorders: anxiety, asthma, diarrhea, cardiac neurosis, agitation or nervousness, tachycardia, cough (BOIT & STENDER, 1954).
	Syn.: Narcissus radiiflorus SALISB.; *Narcissus angustifolius* CURTIS EX HAW.; *Narcissus poëticus* L. subsp. *angustifolius* HEGI). Family: Amaryllidaceae Geographical Distribution: Euc IUCN Category: VU Located in Argeş: Poiana Narciselor Negraşi			

CONCLUSIONS

In Argeş county, a relatively large number of plant species are in different endangered categories. Some of these have medicinal properties. The paper highlights chorology, distribution, vernacular name, vulnerability, their major phototherapeutic effects.

Endangered species from different categories that have medicinal properties will be multiplied by various traditional breeding methods or by biotechnological breeding methods to protect natural species.

REFERENCES

ALEXIU V. 2011. *Categorii sozologice din cormoflora judeţului Argeş*. Edit. Paralela 45. Piteşti. 234 pp.

ALEXIU V. 2008. *Cormoflora judeţului Argeş*. Edit. Ceres, Bucureşti. 323 pp.

BOIT H. G. & STENDER W. 1954. *Uber die alkaloide Narcissus poëticus. I. Mitteil. Uber Amaryllidaceen-alkaloide*. Chem Berichte. **87**: 624-627.

BOJOR O. 2003. *Ghidul plantelor medicinale şi aromatice de la A la Z*. Edit. Fiat Lux, Bucureşti. 266 pp.

BOŞCAIU N., COLDEA GH., HOREANU CL. 1994. *Lista Roşie a plantelor vasculare dispărute, periclitate, vulnerabile şi rare din flora României.* Ocrotirea Naturii şi a Mediului înconjurător. Edit. Academiei, Bucureşti. **38**(1): 45-56.

CHIEJ R. 1984. *The Macdonald Encyclopedia of Medicinal Plants*. Macdonald & Co. London. 274 pp.
CIOCÂRLAN V. 2009. *Flora ilustrată a României. Pteridophyta et Spermatophyta*. Edit. Ceres, Bucureşti. Ed. a III-a. 1141 pp.
DIHORU GH. & DIHORU ALEXANDRINA. 1994. *Plante rare, periclitate şi endemice în Flora României – Lista Roşie.* Acta Horti. Botanici, Bucureşti: 173-197.
DIHORU GH. & NEGREAN G. 2009. *Cartea Roşie a plantelor vasculare din România.* Edit. Academiei Române, Bucureşti. 630 pp.
DOBNER M. J., SOSA S., SCHWAIGER S., ALTINIER G., DELLA LOGGIA R., KANEIDER N. C., STUPPNER H. 2004. *Anti-inflammatory activity of Leontopodium alpinum and its constituents*. Planta medica. **70**(6): 502.
NĂDĂŞAN V. 2003. *Incursiune în fitoterapie*. Edit. Viaţă şi Sănătate, Bucureşti. 288 pp.
OLTEAN M., NEGREAN G., POPESCU A., ROMAN N., DIHORU G., SANDA V., MIHĂILESCU SIMONA. 1994. *Lista roşie a plantelor superioare din România*. Academia Română, Bucureşti: 1-52.
OPREA A. 2005. *Lista critică a plantelor vasculare din România.* Edit. Universităţii „Alexandru Ioan Cuza", Iaşi. 668 pp.
PÂRVU C. 2000. *Universul plantelor*. Mică Enciclopedie. Ed. a III-a, revăzută şi completată. Edit. Enciclopedică, Bucureşti. 871 pp.
***. http://en.wikipedia.org/wiki/IUCN_Red_List (accessed March 11, 2012).

Alexiu Valeriu
University of Piteşti,
Str. Târgu din Vale, No. 1, 110040, Piteşti, Romania
E-mail: alexiuv@yahoo.com

Received: March 31, 2012
Accepted: July 29, 2012