

A CONTRIBUTION TO THE VEGETATION STUDY OF *ARTEMISIETEA VULGARIS* LOHMEYER ET AL. IN R. TX. 1950 CLASS, IN ROMANIA

C. SÎRBU*, A. OPREA**

Abstract: The paper presents a semi-ruderal vegetal association edified by *Daucus carota* and *Picris hieracioides* species; this association hasn't yet been cited from our country until now; this is known from some central-European countries, under the name *Dauco-Picridetum hieracioides* (Fab. 1933) Görs 1966. We have identified this association in the semi-ruderal habitats from Iași and Cotnari vineyards (Iași county).

Key words: ruderal vegetation, *Artemisietea vulgaris* class.

We are describing a vegetal association, namely ass. *Dauco-Picridetum hieracioides* (Fab. 1933) Görs 1966 (Alliance: *Dauco-Melilotion* Görs 1966; Order: *Onopordetalia acanthii* Br.-Bl. et R.Tx. ex Klika et Hadač 1944; Class: *Artemisietea vulgaris* Lohmeyer et al. in R. Tx. 1950), new for Romania, in the present paper.

This association is known in Europe (Germany, Austria, Slovakia, Slovenia and so on), where it is met along the street borders, in the fallow places, left vineyards, slanted taluses, limestone fields, littoral areas and so on. It prefers sunny places and usually stony substratum (D. Brandes, 1977; L. Mucina et al. 1993; I. Jarolimek et al. 1997; M. Kaligarić, 1992).

We have identified these kind of phytocoenoses on the borders of the viticultural plots, in the left vineyards, along of some less trampled alleys, on the some grass-grown bands (less slanted taluses), or on the older fallow places, from a few localities of the Iași county (table 1).

Within the structure of these phytocoenoses there have registered 75 vascular species (39 species with a general frequency higher than 20 %), who had 70-100 % coverage.

The characteristic species of this association are *Picris hieracioides* (V⁺⁵) and *Daucus carota* (V⁺⁴). Other important species in association are: *Poa angustifolia*, *Elymus repens* (V⁺¹), *Cichorium intybus*, *Cirsium arvense* (IV⁺), *Convolvulus arvensis*, *Plantago lanceolata*, *Inula britannica*, *Lolium perenne*, *Trifolium pratense* (III⁺¹), *Conyza canadensis*, *Lathyrus tuberosus*, *Polygonum aviculare*, *Hypericum perforatum*, *Achillea millefolium* (III⁺). Besides these species, in the references, are being also designated the following species: *Pastinaca sativa*, *Arrhenatherum elatius*, and *Centaurea rhenana* and others (those species are absent from our phytocoenosis), with a great frequency.

Besides the characteristic species for the upper coenotaxons (24,0 %), there are also many species from other classes, as follows: *Stellarietea* (22,7 %-including 9,3 % *Sisymbrietalia*), *Festuco-Brometea* (20 %), and *Molinio-Arrhenatheretea* (28,0 %).

* Universitatea Agronomică „Ion Ionescu de la Brad” Iași

** Universitatea „Al. I. Cuza” Iași, Grădina Botanică „A. Fătu”

The participation of classes in the covering of soil is the next: *Artemisietea* - 81,9 %, *Molinio-Arrhenatheretea* - 7,4 %, *Festuco-Brometea* - 6,8 %, *Stellarietea* - 3,2 %, the other classes - 0,6 %.

About 75 % of the species from the floristic structure are met on the similar phytocoenosis from other central-European countries, too. Regarding the characteristic species for *Artemisietea* class, these are all met in the phytocoenosis of this association from the other European countries [1, 2, 3, 5].

As part of the phytocoenoses met on the grass-grown bands from the viticultural plots (table 1, relevé no 7, 8, 9) *Picris hieracioides* is only present, while *Daucus carota* is dominant. Also, some species met in these phytocoenosis are not found in the other phytocoenosis (*Trifolium repens*, *Taraxacum officinale*, *Setaria pumila*, *Sonchus arvensis*, *Bromus arvensis*, *B. hordeaceus*, *B. japonicus*).

In the references from our country is described another association, in which *Daucus carota* is the dominant species together with *Matricaria perforata* (namely, ass. *Dauco-Matricarietum inodora* I. Pop, 1968). In contrast with that, in the *Dauco-Picridetum hieracioides* association, the more and less halophyllous species (*Rumex stenophyllus*, *Atriplex littoralis*, *Lotus tenuis*, *Trifolium fragiferum*, *Teucrium scordium*, *Hordeum hystris*, *Festuca pseudovina*), as well as the mesohygrophillous-higrophyllous species (*Bidens tripartita*, *Lythrum virgatum*, *Althaea officinalis*, *Calystegia sepium*, *Symphytum officinale*, *Lycopus europaeus*, *Mentha longifolia*, *M. pulegium*) are not met. *Matricaria perforata* is also absent in our relevés (the same situation is at M. Kaligarić, 1992), though it is present, with small values of phytocoenological indicators at the other west-European authors [1, 5].

Biological spectrum. Principal life forms are hemicryptophytes (49.3 %), hemitherophytes and therophytes (18.8 % either); other categories are reduced: geophytes (10.7 %) and phanerophytes (2.7 %). The hemitherophytes followed by hemicryptophytes are realizing the maximum covering (72.2 %, respectively 14.8 % out of the average covering) (Fig. No. 1).

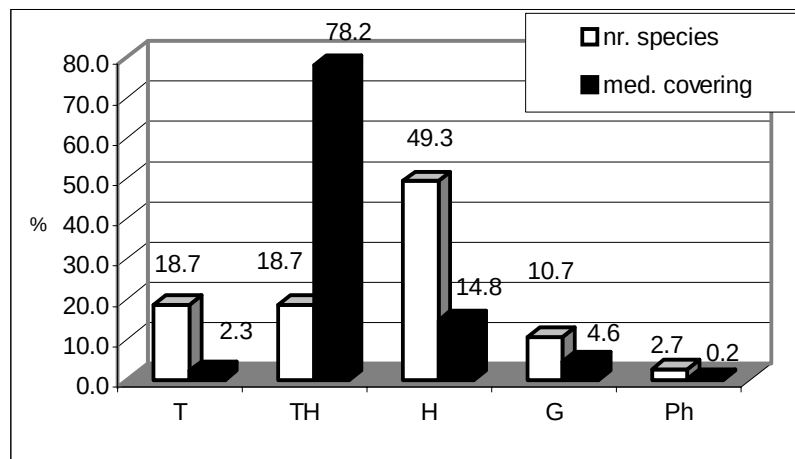


Fig. No. 1. Biological spectrum

Genetic categories spectrum. Regarding the number of species (47.9 %), but mostly regarding the weight in the soil covering (84.4 %), the diploid species are better represented than the polyploid species in this association (Fig. No. 2).

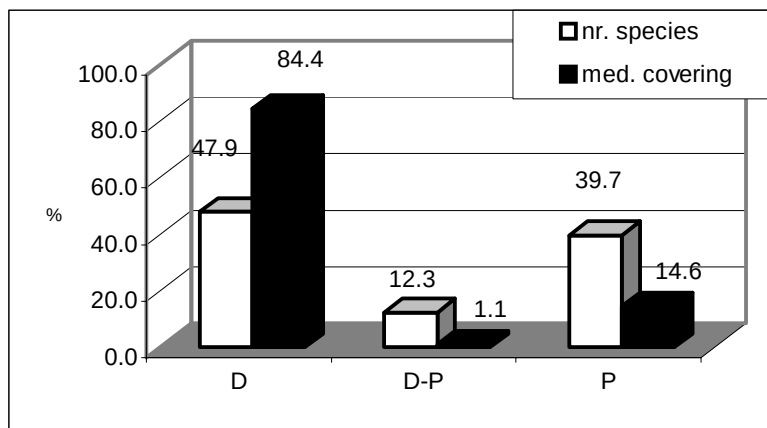


Fig. No. 2. Genetic categories spectrum
Daucu-Picridetum hieracioides

Ecological spectrum. In the Fig. No. 3, as well as the values of ecological medium indices ($L_{4,2}T_{3,3}H_{2,7}R_{3,7}N_{2,9}$ – by the species number; $L_{4,4}T_{3,0}H_{2,4}R_{4,0}N_{2,6}$ – by the medium covering), results that this association is a heliophilous, mesotermophilous, xerophilous-mesophilous, light acid-neutrophilous and moderately nitrophilous association. The presence of most eurythermic (30,7 %) and euryionic (51,4 %) species confers to this vegetal association a pretty large tolerance towards these ecological factors (temperature and soil reaction). Eleven species of this association (14,6 %), including *Picris hieracioides*, prefer the calcareous soils (Fig. No. 3).

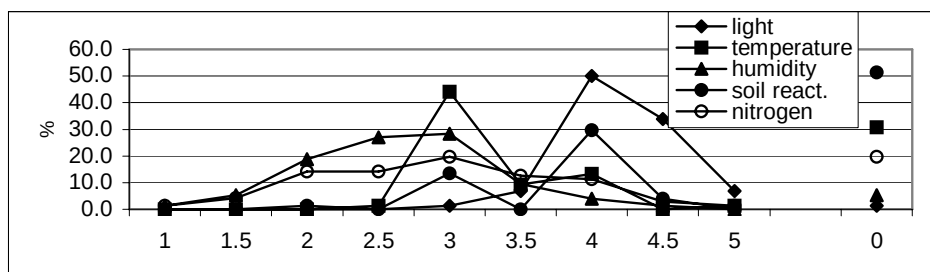


Fig. No.3. Ecological spectrum

Phytogeographical spectrum. The dominant phytogeographical element is the Eurasian (50.7 % of the species, that realizing 92 % of soil covering); the Cosmopolitan (10.7 %), European (6.7 %), Continental-European (6.7 %) elements are represented, too, but with a small covering (Fig. No. 4).

The seasonal dynamics, and physiognomy. The association is easily recognozable in July and August, when the occupied ground dress the white or reddish-yellow raiment, because the abundance of individuals of *Daucus carota* and *Picris hieracioides*; the vegetation is high (about 100 cm), with 3 more or less distinct strata. The first stratum (about 100 cm higher), has a coverage of 45-90 %, and is edified by the next

species: *Daucus carota*, *Picris hieracioides*, *Cichorium intybus*, *Melilotus officinalis*, *Tanacetum vulgare*, *Artemisia absinthium*, *Elymus repens*, *Lactuca serriola*, *Cirsium arvense* etc. The second stratum (about 50-60 cm higher), has a coverage of 10-15 %, with the next species: *Poa angustifolia*, *Bromus japonicus*, *B. hordeaceus*, *Hypericum perforatum* etc., and the third stratum (having 30 cm high), with a coverage of 10-30 %, is edified by: *Lolium perenne*, *Plantago lanceolata*, *Polygonum aviculare*, as well as: *Daucus carota*, *Picris hieracioides*, *Poa angustifolia*, *Taraxacum officinale* etc (these last four species being in the vegetative stages).

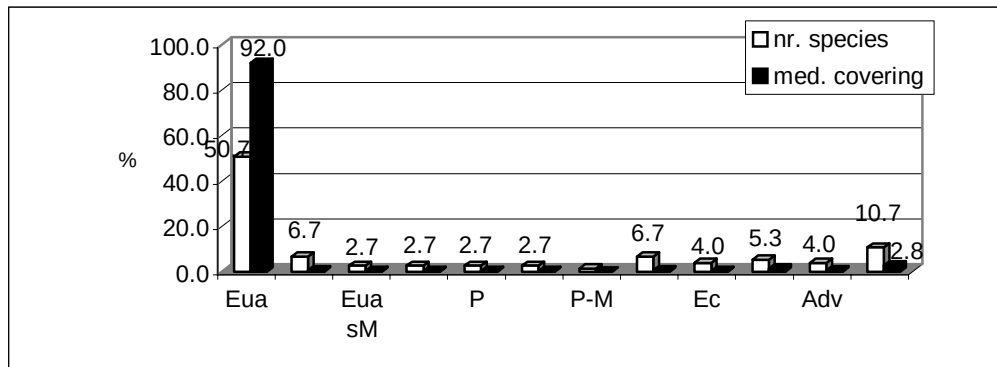


Fig. No. 4. Phytogeographical spectrum

Succession. In view of floristic structure and ecology of this association, it seems possible to be a dynamics towards grassland with *Poa angustifolia*.

The spreading. We have identified this vegetal association in the following points from the Iași county: vine farms Bucium, Pietrăria and Uricani (allong the acces road towards Valea lui David Natural Reserve) (Iași vineyard), and the vine farms Rotila and Dealul lui Vodă (Camnița Hill) (Cotnari vineyard).

Table No. 1 Ass. *Dauco-Picridetum hieracioides* (Fab. 1933) Görs 1966

Surface, sq. m.	50	50	50	30	50	60	30	30	30	Cov %	K
Coverage, %	95	100	85	70	85	95	70	95	95		
Exposition	W	-	E	E	S	E	-	W	W		
Slope, °	2	-	5	5	5	2	-	2	2		
Relevé no.	1	2	3	4	5	6	7	8	9	83,3	
<i>Daucus carota</i>	+	+	3	2	4	4	3	4	4		V
<i>Picris hieracioides</i>	5	5	1	3	1	1	+	+	+		V
Dauco-Melilotum & Onopordetalia											
<i>Cichorium intybus</i>	+	-	+	-	+	+	+	+	-	0.3	IV
<i>Melilotus officinalis</i>	+	-	+	+	-	-	-	-	-	0.2	II
<i>Tanacetum vulgare</i>	+	+	-	-	-	-	-	-	-	0.1	II
<i>Artemisia absinthium</i>	-	-	-	+	+	+	-	-	-	0.2	II
<i>Carduus acanthoides</i>	+	-	+	-	-	+	-	-	-	0.2	II
<i>Crepis foetida</i>	-	-	-	-	-	+	-	-	-	0,0	I
<i>ssp. rhoeadifolia</i>	-	-	-	-	+	-	-	-	-	0,0	I
<i>Erigeron annuus</i>	-	-	-	-	-	-	+	-	-	0,0	I
<i>Echium vulgare</i>	-	-	-	-	-	-	+	-	-	0,0	I
<i>Arctium lappa</i>	-	-	-	-	-	-	+	-	-	0,0	I

Agropyretalia repentis											
Elymus repens	+	1	1	-	+	+	+	+	1	1.9	V
Convolvulus arvensis	+	+	-	+	+	1	-	-	-	0.8	III
Calamagrostis epigejos	-	-	-	-	-	-	-	+	-	0,0	I
Bromus inermis	+	-	-	-	-	-	-	-	-	0,0	I
Linaria vulgaris	-	-	-	-	-	-	-	-	+	0,0	I
Artemisietea											
Artemisia vulgaris	-	-	+	-	-	-	-	-	+	0.1	II
Silene alba	-	-	-	-	-	-	-	-	+	0,02	I
Sisymbrietalia											
Conyza canadensis	-	-	-	+	-	-	+	+	+	0.2	III
Bromus arvensis	-	-	-	-	-	-	+	-	+		II
Bromus hordeaceus (!)	-	-	-	-	-	-	+	+	+	0.2	II
Bromus japonicus	-	-	-	-	-	-	+	+	+	0.2	II
Lactuca saligna	-	-	-	+	-	+	-	-	-	0.1	II
Lactuca serriola	+	+	+	-	-	-	-	-	-	0.2	II
Xanthium italicum	-	-	-	-	-	+	-	-	-	0,02	I
Stellarietea											
Cirsium arvense	+	+	+	+	+	-	+	+	-	0.4	IV
Lathyrus tuberosus	+	+	-	+	+	-	-	+	-	0.3	III
Chenopodium album	-	-	+	-	-	+	-	-	-	0.1	II
Setaria pumila	-	-	-	-	-	-	+	+	+	0.2	II
Sonchus arvensis	-	-	-	-	-	-	+	+	-	0.1	II
Anagallis arvensis	-	-	-	-	-	+	-	-	-	0,02	I
Euphorbia helioscopia	-	-	+	-	-	-	-	-	-	0,02	I
Euphorbia platyphyllos	-	-	+	-	-	-	-	-	-	0,02	I
Sonchus oleraceus	-	-	-	-	+	-	-	-	-	0,02	I
Vicia hirsuta	-	-	-	-	-	-	+	-	-	0,02	I
Polygono-Poëtea annuae											
Polygonum aviculare	-	-	+	-	-	-	+	+	+	0.2	III
Festuco-Brometea											
Poa angustifolia	1	+	1	1	1	-	+	1	1	3.4	V
Hypericum perforatum	-	-	+	-	-	-	+	+	+	0.2	III
Plantago lanceolata	+	+	-	+	+	1	-	-	-	0.8	III
Achillea setacea	+	+	-	-	-	-	-	-	-	0.1	II
Galium humifusum	-	+	-	-	-	+	+	-	-	0.2	II
Galium verum	+	+	-	-	-	-	-	-	-	0.1	II
Potentilla argentea	-	-	-	-	-	-	+	+	-	0.1	II
Centaurea biebersteinii	-	-	+	-	-	-	-	-	-	0,02	I
Cynodon dactylon	-	-	-	+	-	-	-	-	-	0,02	I
Dianthus membranaceus	-	+	-	-	-	-	-	-	-	0,02	I
Festuca valesiaca	+	-	-	-	-	-	-	-	-	0,02	I
Medicago lupulina	-	-	+	-	-	-	-	-	-	0,02	I
Ranunculus polyanthemoides	-	-	-	-	+	-	-	-	-	0,02	I
Salvia nemorosa	-	-	-	-	+	-	-	-	-	0,02	I
Trifolium arvense	-	-	-	-	-	-	-	-	+	0,02	I
Molinio-Arrhenatheretea											
Achillea millefolium	-	+	+	+	-	-	-	-	+	0.2	III
Inula britannica	-	-	+	-	+	1	-	-	+	0.7	III
Lolium perenne	-	-	-	-	+	+	1	+	-	0.7	III
Trifolium pratense	-	-	+	-	-	-	+	+	1	0.7	III
Taraxacum officinale	-	-	-	-	-	-	1	1	+	1.2	II
Trifolium repens	-	-	-	-	-	-	1	1	+	1.2	II

Vicia cracca	+	+	-	-	-	-	-	-	-	0.1	II
Lotus corniculatus	-	-	+	-	-	+	-	-	-	0.1	II
Trifolium hybridum	-	+	+	-	-	-	-	-	-	0.1	II
Festuca pratensis	-	-	-	-	+	+	-	-	-	0.1	II
Plantago major	-	-	-	-	+	-	-	-	-	0,02	I
Agrostis stolonifera	-	-	-	-	+	-	-	-	-	0,02	I
Centaurea jacea	-	+	-	-	-	-	-	-	-	0,02	I
Dactylis glomerata	+	-	-	-	-	-	-	-	-	0,02	I
Heracleum sphondylium	-	-	-	-	-	-	-	-	+	0,02	I
Knautia arvensis	+	-	-	-	-	-	-	-	-	0,02	I
Leontodon asper	-	-	-	-	-	-	+	-	-	0,02	I
Potentilla reptans	-	-	-	-	+	-	-	-	-	0,02	I
Rorippa austriaca	-	-	+	-	-	-	-	-	-	0,02	I
Rumex crispus	-	+	-	-	-	-	-	-	-	0,02	I
Verbena officinalis	-	-	-	-	+	-	-	-	-	0,02	I
Veronica chamaedrys	-	-	-	-	-	-	+	-	-	0,02	I
Rhamno-Prunetea											
Cornus sanguinea	-	-	+	-	-	-	-	-	-	0,02	I
Rosa canina	-	-	-	-	-	+	-	-	-	0,02	I

Place of relevé: Iași vineyard (1, 2: Uricani (David Valley), 7-9: Pietrărie);
Cotnari vineyard (3: Camnița Hill, 4-6: Rotila).

Date of relevé: 1, 2: 16.07.2000; 3: 1.08.2000; 4-6: 26.07.1999; 7-9: 3.08.1998.

References

- BRANDES D., 1977 – Die Onopordion – Gesellschaften der Umgebung Braunschweigs. Mitt. flor.- soz. Arbeitsgem., 19/20: 103-114, Gottingen
- JAROLIMEK I., ZALIBEROVÁ M., MUCINA L., MOCHNACKY S., 1997 – Vegetacia Slovenska. Rastlinné spoločenstva Slovenska, 2. Synantropná vegetácia. Ed. Acad. Slovenska, Bratislava
- KALIGARIC M., 1992 – Vegetacija plevelov v vinogradih kopreskega Primorja. *Annales Univ. v Maribor*, Slo. 2/92 : 35-52
- MUCINA L., 1997 – Conspectus of Classes of European vegetation, Folia Geobot. Phytotax. Praha, 32: 117-172
- MUCINA L. GRABHERR G., ELLMAUER T., 1993 – Die Pflanzengesellschaften Österreichs. Teil. I. Anthropogene Vegetation. Gustav Fischer Verlag Jena. Stuttgart
- POP I., 1968 – *Flora și vegetația Câmpiei Crișurilor*. Ed. Acad., București
- SANDA V., POPESCU A., ARCUȘ MARIANA, 1999 – *Revizia critică a comunităților de plante din România*, Ed. Tilia Press Internațional, Constanța