

PHYTOSOCIOLOGICAL STUDY OF THE POPULATION OF *PAEONIA PEREGRINA* MILL. (*PAEONIACEAE*) IN THE REPUBLIC OF MOLDOVA

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Abstract: The article contains information on the phytosociological study of the population of *Paeonia peregrina* Mill. in the Central Moldavian Plateau, in the Republic of Moldova. Three relevés (plots), with a total area of 3 ha, are described. These phytocoenoses are proposed to be grouped in the association *Paeonio peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999.

Keywords: *Paeonia peregrina*, phytosociological study, Republic of Moldova.

Introduction

The species *Paeonia peregrina* Mill. (*Paeoniaceae*) is a Balkan geophyte, xeromesophile, common in the thermoxerophilous forests from Italy (Basilicata, Calabria), Albania, Greece, Macedonia, Serbia, Bulgaria, Romania (Dobrogea Plateau) and Turkey (Anatolia) [AKMAN & al. 1979; AKSOY & GEMICI, 2010; CHIFU & POPA, 2006; CONTI & al. 2005; DONIȚĂ & al. 1992, 2005; DUMAN, 1988; EKIM & AKMAN, 1991; PETRESCU, 2006-2007; SANDA & al. 2008; SÂRBU, 1982; SÂRBU & al. 1995; ȚUPU & CHIFU, 2009; CHIFU (ed.), 2014]. In the Republic of Moldova, this species of peony has been found in Boltun village, Nisporeni district, it has been protected by the State since 1975 and included in the Red Book of the Republic of Moldova (1978, 2001, 2015, category: Critically Endangered [CR]). Populations of *Paeonia peregrina*, in Moldova, are found at the eastern part of the studied area. Uprooting of plants, grazing and mowing in glades and forest edges are limiting factors for this species [GHEJDEMAN & al. 1982; PÎNZARU & al. 2016]. No phytosociological research on the populations of this species in our country has been done so far, therefore the phytosociological study has been the main objective of this work.

Materials and methods

Phytosociological studies were carried out in May and August 2016, in the Central Moldavian Plateau, using the methods of the European Central school [BRAUN-BLANQUET, 1964]. Three relevés (plots), of 10.000m² each, have been described; the area of the relevés – according to [IVAN & SPIRIDON, 1983]. The floristic nomenclature according to [PÎNZARU & SÎRBU, 2014].

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Results and discussion

Peony (*Paeonia peregrina*), in the Republic of Moldova, is found in thermoxerophile forests of downy oak (*Quercus pubescens* Willd.) with European smoketree (*Cotinus coggygia* Scop.), on hillsides with south-western and western aspect and an angle of slope degree of 10-25°, at the altitude of 180-240 m.a.s.l., in levigated chernozems.

In the vertical structure of phytocoenoses, 3 layers are observed:

1. The degree of canopy – 60-75%. The height of trees – about 7-8 m, the dominant species is downy oak (*Q. pubescens*), with the diameter at breast height 20-24 cm, secondary species: *Tilia tomentosa* Moench, *T. cordata* Mill., *Acer campestre* L., *Cerasus avium* (L.) Moench, *Fraxinus excelsior* L., less frequently – *Acer platanoides* L.

2. The degree of canopy – 30-80%. The height of the layer is about 1.50-3.0 m, it consists of the species: *Acer tataricum* L., *Cotinus coggygia*, *Crataegus monogyna* Jacq., *Rhamnus catartica* L., *Cornus sanguinea* L., *Rosa canina* L., *Euonymus verrucosus* Scop., *E. europaeus* L., *Ligustrum vulgare* L. Young trees of several species are also part of this layer.

3. Herbaceous cover of (5-) 50-80%, in glades – up to 100%, consists, mostly, of herbaceous plants, small shrubs, branches of young shrubs and trees. The height of this layer varies between 25-30 cm (if it consists of medium-sized herbaceous plants) and 80-90 cm (in areas where the abundance+dominance is up to 3-5 of the species *Alliaria petiolata* (M.Bieb.) Cavara et Grande, in thickets of *Cotinus coggygia* or in glades with tall herbaceous plants). In the thickets of European smoketree (*Cotinus coggygia*), there are few herbaceous plants, their abundance varies between "r" and 1. In the described phytocoenoses, only the species: *Convallaria majalis* L., *Buglossoides purpureoerulea* (L.) I. M. Johnst., *Fragaria viridis* Duchesne, *Vinca herbacea* Waldst. & Kit., *Anemone sylvestris* L. have an abundance+dominance of 2-3; the other herbaceous species are represented by an insignificant number of individuals. The lower layer also consists of small groups of *Amygdalus nana* L., *Rosa pimpinellifolia* L. small shoots and plantlets grown from seeds of woody species. Peony (*Paeonia peregrina*) is also found in this layer, in groups or sporadically. Other rare species that have been found are: *Clematis integrifolia* L., *Pulsatilla montana* (Hoppe) Rchb., *Adonis vernalis* L., *Iris graminea* L., *I. variegata* L. Altogether, the floristic composition of the three relevés, in summer, comprises about 140 species; this information has been completed by additional data obtained as a result of the research carried out in spring.

In Romania, the phytocoenoses containing *P. peregrina* have been grouped in several associations: *Paeonio peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999, *Cotino-Quercetum pubescentis* Soó 1932, *Paeonio peregrinae-Carpinetum orientalis* Doniță 1970, *Galio dasypodi-Quercetum pubescentis* Doniță 1970; the last two associations, are considered by some authors synonymous with *Cotino-Quercetum pubescentis* Soó 1932 [SANDA & al. 2008].

We consider questionable the inclusion of the associations with *P. peregrina*, found on Dobrogea Plateau, in different alliances: *Paeonio peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999 in the alliance *Quercion petraeae* Zólyomi et Jakucs in Soó 1963 and *Cotino-Quercetum pubescentis* Soó 1932 in the alliance *Fraxino orni-Cotinion* Soó 1960 [SANDA & al. 2008], because both associations are thermoxerophilous, found on levigated chernozems, at the same altitude, differing only in the absence or the presence of the species *Cotinus coggygia*. Analysing the list of species from the associations of *Quercus pubescens* with *Paeonia peregrina* (Tab. 1) and taking into consideration the characteristics

of the sites described by the authors who determined these associations, we propose to combine all the phytocoenoses of *Quercus pubescens* with *Paeonia peregrina* into a single association: *Paeonia peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999.

Tab. 1. The associations of the alliance *Quercion pubescenti-sessiliflorae*

Number of the column	1			2	3	4	5	6	7
Number of the relevés	3			10	65	12	10	20	10
	1	2	3						
Abundance (AD) or constancy (K)	AD	AD	AD	K	K	K	K	K	K
<u>Characteristic species:</u>									
<i>Paeonia peregrina</i>	r	+	+	III	IV	V	III	IV	V
<i>Quercus pubescens</i>	4	5	5	V	V	IV	IV	V	V
<u>Diff. sous-ass.</u>									
<i>Cotinus coggygria</i>	4	2	2	V	III	IV	-	V	-
<u>Differentiated species:</u>									
<i>Carpinus orientalis</i>	-	-	-	-	IV	V	V	-	-
<i>Galium dasypodium</i>	-	-	-	-	I	-	-	IV	-
<u>Tree layer [A = 60-75%]</u>									
<i>Quercus dalechampii</i>	-	-	-	-	-	-	II	-	III
<i>Or. Quercus pedunculiflora</i>	-	-	-	-	-	I	-	-	-
<i>Or. Quercus virgiliana</i>	-	-	-	-	-	I	-	-	-
<i>Cl. Acer campestre</i>	+	1	+	I	II	-	IV	-	I
<i>Acer platanoides</i>	+	-	-	I	-	-	I	-	-
<i>Al. Carpinus orientalis</i>	-	-	-	-	IV	V	-	-	-
<i>Cl. Cerasus avium</i>	-	+	+	-	-	-	-	-	III
<i>Fraxinus coriariifolia</i>	-	-	-	-	-	-	-	-	I
<i>Cl. Fraxinus excelsior</i>	+	+	+	I	-	V	II	-	I
<i>Or. Fraxinus ornus</i>	-	-	-	I	V	II	III	-	I
<i>Cl. Malus sylvestris</i>	-	-	-	I	-	I	-	-	I
<i>Morus alba</i>	-	-	-	-	-	-	-	-	I
<i>Pyrus elaeagnifolia</i>	-	-	-	II	-	-	-	-	II
<i>Pyrus pyrastrer</i>	-	-	-	III	II	I	II	II	IV
<i>Robinia pseudacacia</i>	-	-	-	-	-	-	-	-	I
<i>Sorbus domestica</i>	-	-	-	-	I	-	-	I	-
<i>Sorbus torminalis</i>	-	-	-	-	II	-	II	-	-
<i>Tilia cordata</i>	+	+	+	-	-	-	-	-	-
<i>Tilia tomentosa</i>	1	+	+	-	III	-	II	-	II
<i>Ulmus procera</i>	-	-	-	II	-	-	I	-	II
<i>Cl. Ulmus minor</i>	-	-	-	-	-	I	-	-	-
<u>Shrub layer [B = 30-80 %]:</u>									
<i>Acer tataricum</i>	1	2	1	III	-	I	-	-	IV
<i>Berberis vulgaris</i>	-	-	-	-	-	I	-	-	-
<i>Clematis vitalba</i>	-	-	-	-	I	I	-	-	I
<i>Cornus mas</i>	1	+	-	III	V	V	V	III	I
<i>Cornus sanguinea</i>	+	+	+	-	-	-	-	-	-

PHYTOSOCIOLOGICAL STUDY OF THE POPULATION OF *PAEONIA PEREGRINA*...

<i>Crataegus monogyna</i>	+	+	+	V	III	V	-	V	V
<i>Euonymus europaeus</i>	1	+	+	I	-	I	-	-	2
<i>Euonymus verrucosus</i>	2	2	1	II	II	V	-	I	III
<i>Ligustrum vulgare</i>	-	1	1	III	II	V	II	II	V
<i>Prunus spinosa</i> s.l.	-	+	+	V	-	-	-	IV	V
<i>Rhamnus cathartica</i>	-	+	+	IV	-	-	-	-	III
<i>Rosa canina</i>	+	+	+	V	-	I	-	-	V
<i>Rosa glauca</i>	-	-	-	-	-	-	-	-	I
<i>Viburnum lantana</i>	+	+	+	II	II	V	-	-	I
<i>Brushwood:</i>									
<i>Quercus pubescens</i>	+	1	+	-	-	-	-	-	-
<i>Cerasus avium</i>	-	+	+	-	-	-	-	-	-
<i>Acer campestre</i>	-	+	+	-	-	-	-	-	-
<i>Acer platanoides</i>	+	-	-	-	-	-	-	-	-
<i>Fraxinus excelsior</i>	+	+	+	-	-	-	-	-	-
<i>Tilia cordata</i>	+	+	+	-	-	-	-	-	-
<i>Tilia tomentosa</i>	+	+	+	-	-	-	-	-	-
<u>Herbaceous layer [C = 5-60(100)%]:</u>									
<i>Achillea pannonica</i>	-	+	+	I	-	-	-	-	-
<i>Achillea setacea</i>	-	+	+	I	-	-	II	-	IV
<i>Adonis vernalis</i>	-	+	+	I	-	-	-	-	I
<i>Agrimonia eupatoria</i>	-	+	+	III	-	-	-	I	IV
<i>Agropyron cristatum</i> s.l.	-	-	-	-	-	-	I	-	-
<i>Ajuga genevensis</i>	-	+	+	-	-	-	-	-	-
<i>Ajuga laxmannii</i>	+	+	-	-	I	-	-	I	I
<i>Ajuga reptans</i>	-	-	-	-	-	-	-	-	I
<i>Alliaria petiolata</i>	5	2	1	II	-	-	I	-	III
<i>Allium oleraceum</i>	+	-	-	-	-	-	-	-	-
<i>Allium paniculatum</i>	-	-	-	-	I	-	-	I	-
<i>Allium rotundum</i>	-	-	-	-	I	-	-	-	-
<i>Althaea cannabina</i>	-	-	-	I	-	-	-	II	I
<i>Althaea officinalis</i>	-	-	-	-	-	-	I	-	-
<i>Anemone sylvestris</i>	-	2	1	-	-	-	-	-	-
<i>Anemonoides ranunculoides</i> [= <i>Anemone ranunculoides</i>]	-	-	-	-	-	I	I	-	-
<i>Anthericum ramosum</i>	1	-	-	-	-	-	-	-	-
<i>Anthriscus longirostris</i> [= <i>A. cerefolium</i> ssp. <i>trichosperma</i>]	+	1	+	-	-	-	I	-	-
<i>Anthriscus sylvestris</i>	-	-	-	-	-	-	-	-	I
<i>Arabis turrita</i>	-	-	-	-	I	-	-	-	-
<i>Arctium lappa</i>	-	-	+	-	-	-	-	-	-
<i>Arenaria serpyllifolia</i>	-	-	-	I	-	-	-	-	-
<i>Artemisia austriaca</i>	-	-	-	I	-	-	I	-	II
<i>Arum orientale</i>	-	-	-	-	I	-	IV	-	-
<i>Asparagus officinalis</i>	r	r	-	I	-	-	-	-	III
<i>Asparagus tenuifolius</i>	r	+	+	IV	III	-	III	IV	III

PAVEL PÎNZARU, VALENTINA CANTEMIR & ȘTEFAN MANIC

Asparagus verticillatus	-	-	-	-	III	IV	II	V	I
Asperula cynanchica	-	-	-	-	-	-	I	-	-
Asperula tenella	-	-	-	I	-	-	-	-	I
Astragalus glycyphyllos	-	-	-	II	I	-	II	II	II
Ballota nigra	-	-	-	-	-	-	-	-	I
Bothriochloa ischaemum	-	-	-	I	-	-	-	-	II
Brachypodium pinnatum	-	-	-	I	II	-	-	-	II
Brachypodium sylvaticum	-	1	+	II	III	III	-	-	II
Bromus benekenii	-	1	-	-	-	-	-	-	-
Bromus inermis	-	-	-	-	I	-	-	V	-
Bromus sterilis	-	-	-	-	-	-	-	-	I
Buglossoides arvensis	-	+	+	-	-	-	-	-	-
Buglossoides purpureoerulea	1	2	2	IV	III	IV	-	V	V
Bupleurum affine	-	-	-	-	I	-	-	I	-
Calamagrostis epigejos	-	-	-	I	-	-	-	-	I
Campanula bononiensis	+	+	+	-	-	-	-	-	-
Campanula glomerata var. cervicarioides	-	r	r	-	-	-	-	-	-
Campanula grossekii	-	-	-	-	-	IV	-	-	-
Campanula persicifolia	-	+	+	III	-	-	-	-	II
Campanula rapunculoides	+	+	+	I	-	-	-	-	I
Campanula rapunculus	-	-	-	I	-	-	-	-	I
Capsella bursa-pastoris	-	-	-	-	-	-	I	-	-
Carduus crispus	-	-	-	-	-	-	I	-	-
Carex contigua (= <i>Carex spicata</i>)	-	+	-	III	-	-	-	-	II
Carex divulsa	-	-	-	III	-	-	-	-	II
Carex halleriana	-	-	-	-	II	I	-	-	-
Carex michelii	-	-	-	-	III	-	-	IV	-
Carex pilosa	-	-	-	-	-	I	-	-	-
Carex praecox	-	-	-	I	II	-	II	-	I
Carex tomentosa	-	-	-	-	I	-	-	II	-
Centaurea orientalis	-	+	-	-	-	-	-	-	-
Centaurea stenolepis	+	+	+	-	-	-	-	-	-
Chenopodium album	-	-	-	I	-	-	II	-	I
Chaerophyllum bulbosum	-	+	-	-	-	-	I	-	-
Chaerophyllum nodosum [= <i>Myrroides nodosa</i>]	-	-	-	-	I	-	II	I	-
Chaerophyllum temulum	-	-	-	I	-	-	II	-	I
Chamaecytisus austriacus	-	-	-	-	-	-	-	-	I
Chamaecytisus lindemaniae	-	-	-	-	-	-	-	II	-
Chondrilla juncea	-	-	-	-	-	-	I	-	-
Chrysopogon gryllus	-	-	-	I	-	-	-	-	I
Cichorium intybus	-	-	-	-	-	-	I	-	-
Clematis integrifolia	-	+	+	-	-	-	-	-	-
Clinopodium vulgare	-	+	+	V	II	-	-	-	V
Convallaria majalis	2	-	-	-	-	-	-	-	-
Convolvulus arvensis	-	-	-	-	-	-	II	-	-
Corydalis cava	-	-	-	-	-	-	II	-	-

PHYTOSOCIOLOGICAL STUDY OF THE POPULATION OF *PAEONIA PEREGRINA*...

Corydalis solida	-	-	-	-	-	-	II	-	-
Crepis foetida s.l.	-	-	-	-	-	-	I	-	-
Cruciata glabra	-	-	-	-	-	-	I	-	-
Cruciata laevipes	-	-	-	-	I	-	-	I	-
Cynanchum acutum	-	-	-	-	-	-	IV	-	-
Dactylis glomerata	+	+	+	III	-	-	II	-	III
Dactylis polygama	-	-	-	-	III	III	-	-	-
Dianthus andrzejowskianus	-	+	+	I	-	-	-	-	-
Dictamnus albus	-	-	-	V	-	-	-	-	II
Digitalis lanata	-	-	-	I	-	-	II	-	I
Echium maculatum	-	-	-	I	-	-	-	-	-
Eryngium campestre	-	-	+	-	-	-	I	-	I
Elytrigia intermedia	-	2	1	-	-	-	-	I	-
Elytrigia repens (= <i>Elymus repens</i>)	-	2	-	I	-	-	-	II	I
Epipactis helleborine [= <i>E. latifolia</i>]	-	-	-	-	-	III	-	-	-
Erysimum canescens	-	+	-	-	-	-	-	-	-
Euphorbia agraria	-	-	-	-	-	-	-	I	-
Euphorbia glareosa	-	-	-	II	-	-	-	-	II
Euphorbia illyrica	-	+	-	-	-	-	-	-	-
Euphorbia stepposa	-	+	+	-	-	-	-	-	-
Falcaria vulgaris	-	+	+	-	-	-	-	-	I
Fallopia convolvulus (= <i>Polygonum convolvulus</i>)	+	+	+	III	-	-	-	-	III
Ferulago sylvatica	-	-	-	-	-	-	-	I	-
Festuca rupicola	-	-	-	-	II	-	-	I	-
Festuca valesiaca	+	+	+	IV	I	-	II	I	II
Ficaria verna s.l. [= <i>R. ficaria</i> subsp. <i>calthifolius</i>]	-	-	-	-	-	-	I	-	-
Filipendula vulgaris	-	+	+	V	I	-	-	III	V
Fragaria vesca	-	-	-	-	-	-	II	-	-
Fragaria viridis	1	2	1	IV	III	I	III	II	V
Fumaria schleicheri	-	-	-	I	-	-	-	-	I
Galanthus graecus	-	-	-	-	-	V	-	-	-
Galanthus plicatus	-	-	-	-	-	-	I	-	-
Galatella lynosiris [= <i>Lynosiris vulgaris</i>]	-	-	-	-	-	-	-	I	-
Galium aparine	2	1	+	III	-	-	I	-	II
Galium dasypodium	-	-	-	-	I	-	-	IV	-
Galium humifusum	-	-	-	I	-	-	-	-	I
Galium mollugo	-	+	-	I	-	-	-	I	I
Galium octonarum	-	-	-	I	-	-	-	-	I
Galium odoratum	-	-	-	-	-	III	-	-	-
Galium schultesii	-	-	-	-	-	-	I	-	-
Galium verum	-	+	-	V	-	-	I	II	IV
Geranium robertianum	-	+	+	I	-	-	-	-	-
Geranium sanguineum	-	1	+	-	-	-	II	I	-
Geum urbanum	+	+	+	IV	III	II	V	-	V
Glechoma hirsuta	1	1	1	III	-	-	II	-	III

PAVEL PÎNZARU, VALENTINA CANTEMIR & ȘTEFAN MANIC

Hedera helix	-	-	-	-	-	I	I	-	-
Helichrysum arenarium	-	-	-	-	-	-	-	-	I
Hesperis tristis	-	-	+	-	-	-	-	-	-
Hieracium robustum	+	+	+	-	-	-	-	-	-
Himantoglossum hyrcinum	-	-	-	-	-	I	-	-	-
Hyacinthella leucophaea	-	-	-	-	-	-	I	-	-
Hypericum hirsutum	-	-	-	-	-	-	-	-	I
Hypericum perforatum	-	-	-	III	I	-	II	-	I
Inula germanica	-	-	-	I	-	-	-	I	I
Inula hirta	-	-	-	IV	-	-	-	-	III
Inula salicina	-	+	-	-	I	-	-	II	-
Iris graminea	-	+	-	-	-	-	-	-	-
Iris variegata	+	+	+	-	-	-	-	-	-
Koeleria macrantha	-	-	-	I	-	-	-	-	I
Knautia arvensis	-	+	+	II	-	-	-	-	I
Lactuca muralis (= <i>Mycelis muralis</i>)	-	-	-	-	-	-	-	-	I
Lamium amplexicaule	-	-	-	-	-	-	I	-	-
Lamium maculatum	-	+	-	-	-	-	I	-	-
Lamium purpureum	-	-	-	-	-	-	III	-	II
Lapsana communis	-	-	-	II	-	-	-	-	III
Lappula squarosa	-	-	-	I	-	-	-	-	I
Laser trilobum	-	-	-	-	I	I	-	III	-
Lathyrus lacteus	-	-	-	V	-	-	-	-	III
Lathyrus niger	-	-	-	III	-	-	-	III	III
Lathyrus pallescens	-	+	+	-	-	-	-	-	-
Lathyrus pannonicus	-	1	+	-	-	-	-	-	-
Leonurus cardiaca	-	-	-	I	-	-	I	-	I
Lepidium draba [= <i>Cardaria draba</i>]	-	-	-	-	-	-	I	-	-
Lepidium ruderae	-	-	-	-	-	-	I	-	-
Leopoldia comosa	-	+	+	-	-	-	-	-	-
Linaria genistifolia	-	-	-	I	-	-	-	-	I
Malva thuringiaca (= <i>Lavathera thuringiaca</i>)	-	-	-	I	-	-	-	-	I
Marrubium peregrinum	-	-	-	-	-	-	III	-	I
Medicago falcata	-	+	-	II	-	-	-	-	I
Medicago lupulina	-	-	-	I	-	-	-	-	I
Melampyrum arvense	-	1	1	-	-	-	-	-	-
Melica ciliata	-	-	-	III	-	-	I	-	III
Melica nutans	-	1	1	-	-	-	-	-	-
Melica transsilvanica	+	+	+	-	-	-	-	-	-
Melica uniflora	-	-	-	-	III	-	V	-	-
Mercurialis ovata	-	-	-	-	III	II	-	-	-
Milium effusum	-	-	-	-	-	-	I	-	-
Muscari racemosum	-	-	-	-	-	-	I	-	-
Myosotis arvensis	-	+	-	-	-	-	I	-	-
Nepeta nuda	-	r	r	I	-	-	-	-	I
Orchis purpurea	-	-	-	-	-	I	I	-	-
Origanum vulgare	-	+	-	II	-	-	-	-	I

PHYTOSOCIOLOGICAL STUDY OF THE POPULATION OF *PAEONIA PEREGRINA*...

<i>Orlaya grandiflora</i>	-	-	-	-	-	-	I	-	-
<i>Ornithogalum fimbriatum</i>	-	-	-	-	I	-	I	-	-
<i>Peucedanum alsaticum</i>	-	r	-	-	-	-	-	-	-
<i>Phleum phleoides</i>	-	1	1	I	-	-	-	-	I
<i>Phlomis tuberosa</i>	-	+	-	-	-	-	-	-	-
<i>Physospermum cornubiensis</i> [= <i>Danaa cornubiensis</i>]	-	-	-	-	-	IV	-	-	-
<i>Pilosella bauhini</i> (= <i>Hieracium bauhini</i>)	-	+	-	I	-	-	-	-	I
<i>Pilosella cymosa</i>	-	+	+	-	-	-	-	-	-
<i>Piptantherum virescens</i>	-	-	-	I	III	-	II	III	II
<i>Plantago media</i>	-	-	-	I	-	-	-	-	I
<i>Plantago lanceolata</i>	-	+	-	I	-	-	-	-	I
<i>Plantago urvillei</i>	.	+	+	-	-	-	-	-	-
<i>Poa angustifolia</i>	-	1	-	V	II	I	I	I	III
<i>Poa bulbosa</i>	-	-	-	-	-	-	I	-	-
<i>Poa nemoralis</i>	-	1	1	II	II	I	-	-	II
<i>Polygonatum odoratum</i>	1	-	-	III	-	-	-	II	III
<i>Polygonatum latifolium</i>	-	1	1	II	II	IV	-	II	II
<i>Potentilla alba</i>	-	-	-	-	-	-	-	-	I
<i>Potentilla argentea</i>	-	-	-	III	-	-	-	-	III
<i>Potentilla patula</i>	-	+	+	-	-	-	-	-	-
<i>Potentilla recta</i>	r	+	r	II	-	-	-	-	I
<i>Primula veris</i>	-	+	-	-	-	-	-	-	IV
<i>Pulmonaria mollis</i>	-	-	-	-	-	-	III	-	III
<i>Pulsatilla montana</i>	-	r	-	-	-	-	-	-	-
<i>Ranunculus auricomus</i>	-	+	+	-	-	-	-	-	-
<i>Rubus caesius</i>	-	-	-	I	-	-	-	-	I
<i>Rubus tomentosus</i>	-	-	-	-	-	-	-	I	-
<i>Rumex acetosa</i> L.	-	+	-	-	-	-	-	-	-
<i>Salvia austriaca</i>	-	+	-	-	-	-	-	-	I
<i>Salvia verticillata</i>	-	-	-	I	-	-	-	-	I
<i>Scilla bifolia</i>	-	-	-	-	I	-	II	-	-
<i>Scutellaria altissima</i>	+	+	+	-	-	I	II	-	-
<i>Securigera varia</i> (= <i>Coronilla varia</i>)	+	+	+	I	-	-	-	-	II
<i>Sedum maximum</i>	+	+	+	II	-	-	I	-	III
<i>Silene alba</i>	-	-	-	-	-	-	-	-	I
<i>Silene coronaria</i> (= <i>Lycnis coronaria</i>)	-	-	-	II	I	-	-	-	I
<i>Silene nutans</i>	-	+	+	-	-	-	-	-	-
<i>Silene otites</i>	-	-	-	II	-	-	-	-	-
<i>Silene vulgaris</i>	-	+	-	-	-	-	-	-	-
<i>Solanum dulcamara</i>	-	-	-	I	-	-	-	-	I
<i>Stachys germanica</i>	-	-	-	I	-	-	-	-	II
<i>Stachys officinalis</i>	-	+	+	III	-	-	-	-	I
<i>Stachys recta</i>	-	+	+	-	-	-	-	-	I
<i>Stachys sylvatica</i>	-	-	-	-	-	-	I	-	-
<i>Stellaria graminea</i>	-	+	-	-	-	-	-	-	-
<i>Stellaria media</i>	-	+	-	-	-	-	I	-	I

PAVEL PÎNZARU, VALENTINA CANTEMIR & ȘTEFAN MANIC

<i>Stipa capillata</i>	-	-	-	-	-	-	-	-	I
<i>Stipa pennata</i>	-	-	1	-	-	-	-	-	-
<i>Tanacetum corymbosum</i> [= <i>Pyretrum corymbosum</i>	-	+	+	I	III	IV	-	V	IV
<i>Taraxacum camyloides</i> (= <i>T. officinalis</i>)	-	-	-	I	-	-	III	-	II
<i>Taraxacum serotinum</i>	-	-	-	-	-	-	II	-	-
<i>Teucrium chamaedrys</i>	1	1	1	III	II	I	II	I	III
<i>Thalictrum aquilegiifolium</i>	-	-	-	II	-	-	-	-	I
<i>Thalictrum minus</i>	+	+	+	III	II	I	I	III	II
<i>Thlaspi perfoliatum</i>	+	+	+	-	II	-	-	-	-
<i>Thymus pannonicus</i> s.l. [= <i>T. pannonicus</i> subsp. <i>auctus</i>]	-	+	+	-	-	-	I	-	-
<i>Torilis arvensis</i>	+	+	+	-	-	-	-	-	I
<i>Tragopogon orientalis</i>	-	+	+	-	-	-	-	-	-
<i>Trifolium alpestre</i>	-	+	+	III	-	-	-	II	IV
<i>Trifolium campestre</i>	-	-	-	-	-	-	-	-	I
<i>Trifolium medium</i>	-	-	-	-	-	-	-	-	III
<i>Trifolium ochroleucon</i>	-	-	-	-	-	-	-	-	I
<i>Trinia kitaibelii</i>	-	-	+	-	-	-	-	-	-
<i>Turritis glabra</i>	-	+	+	I	-	-	-	-	I
<i>Urtica dioica</i>	-	-	-	I	-	-	I	-	I
<i>Valeriana collina</i>	-	+	+	-	-	-	-	-	-
<i>Valerianella locusta</i>	-	-	-	-	-	-	I	-	-
<i>Veratrum nigrum</i>	-	-	-	-	II	-	-	IV	-
<i>Verbascum chaixii</i>	-	-	-	-	I	-	-	I	-
<i>Verbascum nigrum</i>	-	-	-	-	-	-	-	I	-
<i>Verbascum phlomoides</i>	-	-	-	II	-	-	I	-	I
<i>Verbascum phoeniceum</i>	-	-	-	-	I	-	-	II	-
<i>Verbascum speciosum</i>	-	-	-	-	-	-	-	-	I
<i>Veronica arvensis</i>	-	+	+	-	-	-	-	-	-
<i>Veronica austriaca</i>	-	-	-	II	-	-	-	-	I
<i>Veronica chamaedrys</i>	-	+	-	III	-	-	-	I	III
<i>Veronica hederifolia</i>	-	-	-	-	-	-	I	-	-
<i>Veronica jacquinii</i>	-	+	+	-	-	-	-	-	-
<i>Veronica orchidea</i>	-	-	-	-	-	-	-	-	I
<i>Vicia angustifolia</i>	-	-	-	-	-	-	-	I	-
<i>Vicia cassubica</i>	-	+	+	-	-	-	-	-	II
<i>Vicia cracca</i>	-	-	-	II	-	-	-	-	-
<i>Vicia grandiflora</i>	-	-	-	-	-	-	-	I	-
<i>Vicia hirsuta</i>	-	-	-	-	-	-	I	-	-
<i>Vicia pisiformis</i>	+	-	-	-	-	-	-	-	-
<i>Vicia tenuifolia</i>	-	-	-	-	-	-	-	II	-
<i>Vicia tetrasperma</i>	-	-	-	-	-	-	-	-	I
<i>Vinca herbacea</i>	-	2	2	III	II	-	II	II	III
<i>Vincetoxicum hirundinaria</i>	+	+	+	III	-	-	-	-	III
<i>Viola arvensis</i>	-	+	-	-	-	-	-	-	-
<i>Viola hirta</i>	-	+	-	V	-	-	II	-	V

PHYTOSOCIOLOGICAL STUDY OF THE POPULATION OF *PAEONIA PEREGRINA*...

Viola jordanii	-	-	-	-	I	-	-	II	-
Viola mirabilis	-	-	-	I	-	I	-	-	I
Viola odorata	+	1	1	-	-	-	II	-	I
Viola reichenbachiana	-	-	-	-	-	-	IV	-	-
Viola suavis	-	-	1	I	I	-	III	-	III
Amygdalus nana	+	2	1	-	-	-	-	-	II
R. pimpinellifolia	-	1	-	-	-	-	-	-	-
<i>Brushwood:</i>									
Cotinus coggygria	3	4	4	-	-	-	-	-	-
Quercus pubescens	1	1	+	-	-	-	-	-	-
Acer campestre	+	+	+	-	-	-	-	-	-
Cerasus avium	-	+	+	-	-	-	-	-	-
Euonymus verrucosus	+	+	+	-	-	-	-	-	-

Content of the columns: **1** (3 relevés) from R. Moldova; **2** - as. *Cotino-Quercetum pubescentis* Soó 1932: CHIFU & POPA, 2006; **3 - 4** - as. *Paeonio peregrinae-Carpinetum orientalis* Doniță 1970: DONIȚĂ & al. 1992, tab. 32; **5** - as. *Paeonio peregrinae-Carpinetum orientalis* Doniță 1970: ȚUPU & CHIFU, 2009; **6** - As. *Galio dasypodi-Quercetum pubescentis* Doniță 1970: DONIȚĂ & al. 1992, tab. 32; **7** - as. *Paeonio peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999: CHIFU & POPA, 2006.

Conclusions

The studied plant communities with *Paeonia peregrina* from the forests of *Quercus pubescens* and *Cotinus coggygria*, from the Republic of Moldova, fit in the association *Paeonio peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999.

The association *Paeonio peregrinae-Quercetum pubescentis* (Sârbu 1982) Popescu et Sanda 1999 is proposed to be included in the alliance *Quercion pubescenti-petraeae* Br.-Bl. 1932, ord. *Quercetalia pubescenti-petraeae* Klika 1933, cl. *QUERCO-FAGETEA* Br.-Bl. et Vlieger in Vlieger 1937.

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