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COMPARATIVE ANALYSIS OF ECOLOGICAL AND PHYTOCENOLOGICAL CHARACTERISTICS OF MESOPHYLL MEADOWS OF THE ALLIANCE *PANCICION* LAKUŠIĆ 1966 FROM THE AREA OF NATIONAL PARK »BIOGRADSKA GORA« AND OF THE MOUNTAIN OZREN NEARBY SARAJEVO

UPOREDNA ANALIZA EKOLOŠKIH I FITOCENOLOŠKIH KARAKTERISTIKA MEZOFILNIH LIVADA SVEZE *PANCICION* LAKUŠIĆ 1966. SA PROSTORA NACIONALNOG PARKA »BIOGRADSKA GORA« I PLANINE OZREN KOD SARAJEVA

Izvod

Mezofilne livade gorskog i subalpinskog pojasa planine Bjelasice i N.P. »Biogradska gora« pripadaju svezi *Pancicion* Lakušić 1966. Diferenciriaju se na dvije asocijacije — *Trifolio-Polygaletum azurae* Lakušić 1966 i *Ranunculo-Pancicietum montenegrinum* Lakušić 1966. Na prostoru planine Ozren kod Sarajeva livade sveze *Pancicion* diferenciraju se na sedam asocijacija — *Violeto-Festucetum fallacis* Ht 1960, *Ranunculo-Pancicietum serbicae* Lakušić 1976, *Conyzifolio-Lilietum bosniacae* Bjelčić 1966, *Pancicio-Lilietum bosniacae* Bjelčić et Lakušić 1969, *Hypochoereto-Crepidetum conyzifoliae* Redžić 1990, *Knautio-Pancicietum serbicae* Redžić 1990. i *Pediculari-Astrantietum elatioris* Redžić 1990.

Synopsis

Tle mesophyll meadows of the mountain and subalpine zone of the mountain Bjelasica and National Park »Biogradska gora« belong

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to alliance *Pancicion* Lakušić with community *Trifolio-Polygaletum azureae* Lakušić 1966 and *Ranunculo-Pancicietum montenegrinum* Lakušić 1966.

In tle area of the mountain Ozren nearby Sarajevo meadows alliance *Pancicion* Lakušić are differentiated in seven associations — *Violeto-Festucetum fallacis* Ht 1960, *Ranunculo-Pancicietum serbicae* Lakušić 1966, *Conyzifolio-Lilietum bosniacae* Bjelčić 1966, *Pancicio-Lilietum bosniacae* Bjelčić et Lakušić 1966, *Hypochoereto-Crepidetum conyzifoliae* Redžić 1990, *Knautio-Pancicietum serbicae* Redžić 1990 and *Pediculari-Astrantietum elatioris* Redžić 1990.

INTRODUCTION

In series of biological-ecological particularities of Natural Park »Biogradska Gora« and of the mountain Bjelasica, the mesophyll mountain and subalpine meadows have a special position. Lakušić (1966) was the first one researching mesophyll meadows of this area in detail and sorting them out in one special alliance *Pancicion* Lakušić 1966 having an endemic Balkanic character, the center of spreading directed to the southeastern Dinaric Alps. During further phytocenological and ecological researches the meadows of this alliance were found also in other areas — Mokra gora on Kosovo Provincie (Stanković-Tomić, 1970), in the southeastern Serbia, wide spread in Montenegro (Blečić et Tatić, 1966; Lakušić, 1970; Markišić, 1984), on middle and partly on continental Dinaric Alps (Bjelčić, 1966; Bjelčić et Lakušić, 1969; Lakušić et al. 1969, 1973, 1979, 1982, 1987a, 1987b; Mišić, 1984).

In the recent time the meadows were found and researched in detail also in the area of the mountain Ozren nearby Sarajevo, where is situated one of the northest habitats of the characteristic and builder species *Pancicia seribca* Vis. (Lakušić, 1965).

In this report are also presented the results of comparative researches of structure, dynamics, horology, syngenesis and ecology of communities of the alliance *Pancicion* from the area of these two mountains.

MATERIAL AND METHODS

The phytocenological and ecological data concerning the researches of meadows of the mountain Bjelasica derive from Lakušić (1966) and Redžić (1986 mscr.) and of the mountain Ozren from Redžić, and these have been collected in the last 10 years.

The phytocenological sampling on both mountains was performed by the method of Braun-Blanquet (1964). Belonging to

tle floral element and to the life form was detached for a large number of species according to Oberdorfer (1983,) and for endemic and relicts according to Beck (1903—1927), Beck et al. (1950—1983), Hayek (1927—1933), Rohlena (1942), Lakušić (1966), (1968) Lakušić et al. (1989).

RESULTS AND DISCUSSION

In the highland and in lower parts of subalpine zone of the mountain Bjelasica mesophyll meadows of the alliance *Pancicion* in two association — *Trifolio-Polygaletum azureae* Lakušić 1966, and *Ranunculo-Pancicietum serbicae montenegrinum* Lakušić 1966, are differentiated.

They are spread on the altitudes between 900 and 1800 m, on different expositions and on the ground inclination between 0 and 25°. The geological foundation on their habitats consists of diabase, sandy ground, and schists, and the soils are district cambisoil, deeper ranker and in lower and plain districts there are luvisoll. The community *Ranunculo-Pancicietum serbicae montenegrinum* is very wide spread. It is differentiated in three subassociations. — R. — *P.s.m. asphodeletosum albi* Lakušić 1966, *R. — P.s.m. typicum* Lakušić 1966 and *R. — P.s.m. poetosum alpinae* Lakušić 1966 by means of which is achieved an ecological continuity with mountain pastures of the alliance *Jasionion orbiculatae* Lakušić 1966. In the construction of these communities are included over 100 species — 76 in the first one and 117 in the second one.

The communities *Fagetum moesiacae montanum* Blečić et Lakušić 1970, and *Fago-Aceretum* Blečić et Lakušić 1970 and partially *Abietetum dinaricum* Lakušić 1990 are spread on former habitats.

The mesophyll meadows of highland and of lower parts of the subalpine zone on the district of the mountain Ozren are spread on the altitude from 1300—1500 m, on different expositions and on the ground inclination up to 30°. The geological foundation on the habitats of these communities is represented by different siliceosus stouns, and limestones being very often intercalated by siliceosus stouns. The soils are district cambisoils, luvisoil, rankers and limestone cambisoil and kalkomelanosoils.

The communities *Abieti-Piceetum illyricum* Fuk. 1960 emend. Stef. 1963, and *Abieti-Fagetum moesiacae piceetosum* Lakušić are spread on former habitats.

A more distinct variation of ecological circumstances, especially of air temperatures makes about 70°, more heterogenous geological foundations and ground types, the position and distance from the mountains of middle Dinaric Alps and from the sea, the climate continentality caused spreading of some communities — *Violeto--Festucetum fallacis* Ht 1960, *Ranunculo-Pancicietum serbicae*

Lakušić 1966, *Conyzifolio-Lilietum bosniacae* Bjelčić 1966, *Pancicio-Lilietum bosniacae* Bjelčić et Lakušić 1969, and *Hypochoereto-Crepidetum conyzifoliae* Redžić 1990, *Knautio--Pancicietum serbicae* Redžić 1990 and *Pediculari-Astrantietum elatoiris* Redžić 1990, for the time being distinctive for the mountain Ozren.

With regard to floristich, the communities are very good differentiated. By means of comparative analysis of characteristic species of communities from these two mountains it was found a very high level of differentiation. In this regard the *Pancicia serbica* is the only being common for three communities. Other communities are characterized by other species (Tab. 1). These are mainly endemic and relict forms of Dinaric and Balkanic spreading.

The communities from the area of Bjelasica are differentiated through 50 different species. Are the most important ones *Polygala major* f. *azurea, Galium verum* f. *pallidum, Centaurea jacea* var. *weldeniana, Hypericum barbatum, Crepis conyzifolia* var. *montenegrina, Jasione orbiculata, Pedicularis verticillata, Thumus albanus, Meum athamanticum* and others (Tab. 2).

The communities of the alliance *Pancicion* from Ozren are differentiated from the communities of Bjelasica through a larger number of species. The largest plantgeographical and phytocenological significance have *Knautia sarajevensis, Minuartia junipernina, Silene bosniaca, Gentianella, crispata, Laserpitium marginatum, Lilium bosniacum, Scabiosa leucophylla, Arnica montana, Thymus balcanus, Pedicularis hoermanniana* and others (Tab. 2).

The reserched communities conect a lot of species, that are distinctive for the alliance *Pancicion*, and order *Arrhenatheretalia* Pawl. in Pawl. et al. 1928, and class *Molinio-Arrhenatheretea* R. Tx. 1937 (Tab. 2). Are the most important ones *Pancicia serbica, Ranuculus montanus, Scorzonera rosea, Silene sendtneri, Hieracium pavichii, Alchemilla vulgaris, Festuca nigrescens, Leucanthemum vulgare, Cynosurus cristatus, Trifolium pratense* and others.

A few particularities were found through a plantgeographical analysis. In the communities from Bjelasica there are considerably more species of Dinaric and especially of Balcanic spreading (for about 2% of Diniric and 10% of Balkanic) and e.t.c. (Tab. 3). In the communities from Ozren there are mor ealpine and prealpine species, subatlantic and continental species, definite speaking about the relationship of these communities with similar communities from the of Alps, Tatra and Carpathians (Tab. 3).

The analysis of life forms shows, that the communities from Bjelasica have a haemocryptophyt — haemophyt character and those from Ozren have mainly a haemocryptophyt — geophyt character pointing out, that the climate on Ozren is a bit more humid. (Tab. 4).

LOCALITY (LOKALITET)	BJELASICA	O	Z	R	E	N		
COMMUNITY (ASOCIJACIJA)	TRIFOLIO-POLYGALETUM AZUREAE LAKUŠIĆ 1965	RANUNCULO-PANCICIETUM SERBICAE LAKUŠIĆ 1966	RANUNCULO-PANCICIETUM SERBICAE LAKUŠIĆ 1966	PANCICIO-LILIETUM BOSNIACAE BJELČIĆ ET LAKUŠIĆ 1969	KNAUTIO-PANCICIETUM SERBICAE REDŽIĆ 1990	VICIETO-FESTUCETUM PALLACIS HT 1960 EM. LAKUŠIĆ 1979 IN LAKUŠIĆ ET AL. 1979	PEDICULARI-ASTRANTIETUM MAJORIS REDŽIĆ 1990	HYPOCHOERETO-CREPIDETUM CONYZIFOLIAE REDŽIĆ 1990	CONYZOFOLIO-LILIETUM BOSNIACAE BJELČIĆ 1966
FLORISTIC COMPOSITION: (FLORISTIČKI SASTAV:)									
POLYGALA MAJOR JACQ. F. AZUREA PANT.	3								
TRIFOLIUM CAMPESTRE SCHREBER	5								
GALIUM VERUM L. F. PALLIDUM ČEL.	5								
CENTAUREA JACEA L. VAR. WELDENIANA (RCHB.)BRIQU.	5								
RHINANTHUS ALECTOROLOPHUS SCHL. ET VUK.		5							
CREPIS CONYZIFOLIA (GOU.)D.T. VAR. MONTENEGRINA (RCHL.)HAY.		2							
KNAUTIA PURPUREA (VILL)BORB. VAR. MONTENEGRINA (BECK)SZABO		1							
RANUNCULUS MONTANUS WILLD.		5	5						
PANCICIA SERBICA VIS.		3		5	5				
VIOLA ELEGANTULA SCHOTT			4			5			
KNAUTIA SARAJEVENSIS (G. BECK) SZABO			1		5				
ALECTOROLOPHUS MINOR W. ET GR.			5						
CREPIS CONYZIFOLIA (GOUAN)A. KERNER				5				5	
LILIUM BOSNIACUM (G. BEUK)G. BECK EX FF.									5
SILENE SENDTNERI BOISS.				5					
SCORZONERA ROSEA WALDST. ET KIT.					5				
TRIFOLIUM ALPESTRE L.					4				
TRIFOLIUM MONTANUM L.						5			
ALCHEMILLA XANTHOCHLORA ROTHM									
CARUM CARVI L.									
FESTUCA NIGRESCENS LAM.						5			
ASTRANTIA MAJOR L. SUBSP. ELATIOR (PRIV.)K. MALY							5		
PEDICULARIS HOERNANIANA K. MALY							2		
HYPOCHOERIS MACULATA L.								5	
AVENASTRUM BLAVII G. BECK P.ALPINUM G. BECK.								4	
ORCHIS GLOBOSA L.									5
TRIFOLIUM PANNONICUM JACQ.									5
SILENE BOSNIACA (G. BECK) HAND.-MAZZ.									5

X -

- Oznake od 1 do 5 označavaju stepen stalnosti.

FLORISTIC COMPOSITION: (FLORISTIČKI SASTAV)	BJELASICA	OZREN
CHAR. SPECIES OF ALL. PANCICION LAKUŠIĆ 1966 (KAR. VRSTE SVEZE PANCICION LAKUŠIĆ 1966):		
PANCICIA SERBICA VIS.	+	+
RANUNCULUS MONTANUS WILL.	+	+
SCORZONERA ROSEA W.et K.	+	+
SILENE SENDTNERI BOISS.	+	+
HIERACIUM PAVICHII HEUF.	+	+
ALCHEMILLA VULGARIS L.	+	+
FESTUCA NIGRESCENS LAM.	+	+
CHAR. SPECIES OF ORDER ET KLASSIS (KAR. VRSTE REDA ARRHENATHERETALIA PAWL. 1928 I KLASE MOLINIO-ARRHENATHERETEA R. Tx. 1937):		
LEUCANTHEMUM VULGARE L.	+	+
CYNOSURUS CRISTATUS L.	+	+
LEONTODON AUTUMNALIS L.	+	+
ANTOXANTHUM ODORATUM L.	+	+
TRIFOLIUM PRATENSE L.	+	+
TRIFOLIUM REPENS L.	+	+
TRAGOPOGON PRATENSIS L.	+	+
ACHILLEA MILLEFOLIUM L.	+	+
BRIZA MEDIA L.	+	+
LATHYRUS PRATENSIS L.	+	+
LOTUS CORNICULATUS L.	+	+
CAMPANULA PATULA L. F. JAHORINAE K. MALY	+	+
VICIA CRACCA L.	+	+
RUMEX ACETOSA L.	+	+
CREPIS BIENNIS L.	+	+
PHLEUM PRATENSE L..	+	+
AGROSTIS CAPILLARIS L.	+	+
TARAXACUM OFFICINALE WEB.	+	+
DIFF. SPECIES OF A COMMUNITES: (DIF. VRSTE ASOCIJACIJA):		
POLYGALA MAJOR JACQ. F. AZUREA PANT.	+	.
GALIUM VERUM F.PALLIDUM ČEL.	+	.
CENTAUREA JACEA-WELDENIANA (RCHB.)BRIQU.	+	.
MOENCHIA HERCEGOVINA	+	.
COELOGLOSUM VIRIDE HARTM.	+	.
DIANTHUS SYLVESTRIS WULF.	+	.
GERANIUM COLLUMBINUM L.	+	.
HYPERICUM BARBATUM JACQ.	+	.
THLASPI PRAECOX BALD.	+	.
CORONILLA CORONATA L.	+	.
CREPIS CONYZIFOLIA (GOU.)D.T. VAR. MONTENEGRINA (ROHL.)HAY.	+	.
VIOLA TRICOLOR L. SUBS. SUBALPINA GAUD.	+	.
FREYRA CYNAPIOIDES (GUSS.)GRIS.	+	.
CREPIS AUREA (L.)CASS. VAR. BOSNIACA K. MALY	+	.
KNAUTIA PURPUREA (VILL.)BORB. VAR. MONTENEGRINA (BECK)SZABO	+	.
PHYTEUMA ORBICULARE L.	+	.
JASIONE ORBICULATA GRISEB.	+	.
PEDICULARIS VERTICILLATA L.	+	.
MEUM ATHAMANTICUM JACQ.	+	.
THYMUS ALBANUS H.BR.	+	.
VIOLA LATISEPALA WETTST.	+	.
PRIMULA INTRICATA GREN. et GODR.	+	.
FESTUCA SPADICEA L.	+	.
SCABIOSA PORTAE KERN.	+	.
DIANTHUS PETRAEUS W. et K.	+	.
ASPHODELUS ALBUS (L.)MILL.	+	.
GENISTA GERMANICA L.	+	.
ACHILLEA LINGULATA W. et K.	+	.
ORCHIS BOSNIACA G. BECK	+	.
SENECIO DORONICUM L.	+	.
VERONICA AUSTRIACA L.	+	.
HYPOCHERIS ILLYRICA K. MALY	+	.
PLANTAGO RENIFORMIS G. BECK	+	.

FLORISTIC COMPOSITION: (FLORISTIČKI SASTAV)	BJELASICA	OZREN
MUSCARI BOTRYOIDES MILL.	+	.
STACHYS ALBANICA MGF.	+	.
LILIUM ALBANICUM GRIS	+	.
VERONICA ARVENSIS L.	+	.
LUZULA SPICATA LAM. et DC.	+	.
LYCHNIS FLOS-CUCULI L.	+	.
GYMNADENIA CONOPEA (L.)R.BR.	.	+
GYMNADENIA ODORATISSIMA (L.) RICH	.	+
TRISETUM FLAVESCENS (L.) BEAUV.	.	+
HYPOCHOERIS MACULATA L.	.	+
HYPOCHOERIS RADICATA L.	.	+
KNAUTIA SARAJEVENSIS (G.BECK)SZABO..	.	+
KNAUTIA ARVENSIS (L.)COULT.	.	+
CENTAUREA SCABIOSA L.	.	+
MINUARTIA JUNIPERINA (L.)MEIR-PET.	.	+
SILENE BOSNICA (G.BECK)HAND.-MAZ.	.	+
VIOLA ELEGANTHULA SCHOTT.	.	+
GENTIANELLA CRISPATA (VIS.)HOLUB.	.	+
LASERPITIUM MARGINATUM W. et K.	.	+
LILIUM BOSNIACUM G. BECK	.	+
TRIFOLIUM ALPESTRE L.	.	+
FILIPENDULA VULGARIS MOENCH.	.	+
POA VIOLACEA BELL.	.	+
DANTHONIA DECUMBENS (L.)DC	.	+
ARNICA MONTANA L.	.	+
ORCHIS GLOBOSA L.	.	+
SCABIOSA LEUCOPHYLLA BORBAS	.	+
BROMUS ERECTUS HUDSON	.	+
CARLINA ACANTHIFOLIA ALL.	.	+
HELLEBORUS ODORUS W. et K.	.	+
GALIUM LUCIDUM ALL.	.	+
GALIUM CORRUDAEFOLIUM VILL.	.	+
THYMUS BALCANUS BORBAS	.	+
GENTIANA ASCLEPIADEA L.	.	+
ANTENNARIA DIOICA (L.)GAERTN.	.	+
HIERACIUM AURANTIACUM L.	.	+
ERIGERON ACER L.	.	+
ASPERULA CYNANCHYCA L.	.	+
BOTRYCHIUM LUNARIA (L.)SW.	.	+
NIGRITELLA NIGRA (L.)REICH.	.	+
CREPIS VISCIDULA FROL.	.	+
TROLLIUS EUROPAEUS L.	.	+
FERULAGO GALBANIFERA KOCH.	.	+
PEDICULARIS HOERMANIANA K. MALY	.	+
PIMPINELLA SAXIFRAGA L.	.	+
GENTIANA KOCHIANA PER. et SONG	.	+
GENTIANELLA GERMANICA (WILD.)WARB.	.	+
AVENASTRUM BLAVII BECK	.	+
ORCHIS SAMBUCINA L.	.	+
SCABIOSA COLLUMBARIA L.	.	+
GENTIANA CILIATA L.	.	+
GENTIANA TERGESTINA G. BECK	.	+
TELEKIA SPECIOSA BAUMG.	.	+

Community (Asocijacija)	I n	I %	II n	II %	III n	III %
din	—		—		5	
s.din	3	*5,26*	3	*2,56*	2	*2,25*
din,ost.alp.	1		—		—	
balc	5		17		14	
o.balc	—		1		1	
w.balc	—	*6,58*	2	*17,95*	1	*6,75*
balc.-apen.	—		—		4	
s.balc	—		1		—	
balc.-alp.	—		—		1	
s.eur	—		1	*0,85*	6	*1,93*
alp	—		2		8	
alp-balc	—		—	*2,56*	5	*5,14*
alp-pralp	—		1		2	
alp(-arct.)	—		—		1	
pralp	—		1		8	
o.pralp	—		—		2	
(o)pralp	1		2		3	
opralp-smed	2		—		—	
W.pralp	—		1		—	
pralp-alp	—		1		—	
pralp-smed(subatl), circ	—		—		1	
pralp-euraskont	—		—		1	
pralp-no-subozean	—	*3,95*	—	*4,27*	1	*10,93*
pralp-no-(subozean)	—		—		1	
o,pralp(-smed)	—		—		1	
pralp(-gemässkont)	—		—		2	
o·pralp (-gemässkont)	—		—		2	
pralp-smed	—		—		1	
pralp-no	—		—		2	
pralp-alp	—		—		1	
pralp(-smed)	—		—		4	
pralp(no-subatl)	—		—		1	
no-pralp	—		—		3	
omed-kont	—		—		1	
med-smed-euras	—		—		1	
med-smed(-kont)	—		—	*0,85*	1	*1,61*
med	—		—		1	
med-atl	—		1		—	
med(-kont)	—		—		1	
(pralp-)alp-arct (-no)	—		—		1	
arct-alp(subozean), circ	—		1	*1,71*	—	*0,32*
circum arct-alp	—		1		—	
atl-smed	—		—		1	*0,32*
circumbor.	3	*3,95*	10	*8,55*	2	*0,64*
subcosm.	2	*2,63*	3	*2,56*	—	

Community (Asocijacija)	I n	I %	II n	II %	III n	III %
subatl-smed-med	1		1		—	
subatl(-smed)	1		1		6	
osmed	1		1		2	
smed-subatl	4		4		4	
(eurassubozean) smed	1		—		1	
subatl-smed	3		1		14	
smed (-eurocont)	1		1		—	
smed-euras	1		1		2	
smed	2		22		12	
smed-eurassubozean	—		1		1	
smed(eurassubozean)	—		1		—	
smed-gemässkont	—		1		4	
subatl-smed(-pralp)	—		—		1	
smed-pralp	—		—		1	
subatl	—	*19,74*	—	*12,82*	2	*23,15*
smed,ost.balc	—		—		1	
osmed-pralp	—		—	12,82	1	23,15
osmed-kont	—		—		1	
(o)smed-pralp	—		—		1	
smed-gemässkont(-pralp)	—		—		2	
osmed(europkont)	—		—		1	
smed(-pralp)	—		—		1	
smed-(gemässkont)	—		—		1	
smed-atl.	—		—		1	
smed-med	—		—		2	
subatl-submed	—		—		1	
submed(-subatl)	—		—		1	
smed(-euras)	—		—		1	
w.smed(-subatl)	—		—		1	
(no-) subal	—		—		1	
smed-euras(kont)	—		—		1	
(eurassubozean)subatl(-smed)	—		—		1	
(o)smed	—		—		1	
(pralp-)smed-subatl	—		—		1	
osmed(-gemässkont)	—		—		1	
euras-smed	4		6		8	
euras(smed)	2		—		1	
euras(kont)(smed)	3		3		5	
no-euras	1		2		9	
euraskont	1		1		2	
euras	2		1		—	
no-euras-smed	2		1		2	
no-euras, circ	1		1		1	
(no-)euras	1		—		1	
no-euras-kont(smed)	—	*22,37*	1	*15,38*	—	*12,22*
no-euras(-smed)	—		1		—	
euras(kont)	—		—		3	
no(-euras)	—		1		—	
no-euras-smed, circ	—		—		1	
euras(-smed), circ	—		—		1	
no-euraskont	—		—		1	
no-euras(-smed), circ	—		—		1	
(no)-euras(kont)	—		—		1	
euras(kont)	—		—		1	
eurassubozean	3		1		7	

Community (Asocijacija)	I n	%	II n	%	III n	%
eurassubozean-smed	4		4		16	
(no-)eurassubozean	1		1		2	
no-subozean	—		—		—	
euras(subozean)-smed	1		1		2	
no-eurossubozean	4		5		18	
no-euras(subozean)	3		3		5	
(no-)eurassubozean(-smed)	1		—		1	
eurassubozean, circ	1		1		—	
no-eurassubozean-smed	—		1		—	
у новине, а по заслузи зна	—	*25,00*	1	*17,09*	4	*23,15*
(arct-)no(eurassubozean)	—		1		1	
no-euras(subozean)(smed)	—		1		—	
no-eurassubozean, circ	—		—		3	
no(eurassubozean)	—		—		1	
euras(subozean), circ	—		—		2	
no-subozean-pralp	—		—		1	
euras(subozean)	—		—		2	
euras(subozean)-smed	—		—		1	
no-euras(subozean), circ	—		—		2	
eurassubozean-smed, circ	—		—		1	
(no-)eurassubozean-smed	—		—		1	
gemässkont	1		2		5	
europ-medit	1		—		—	
euraskont(smed)	1		1		2	
gemässkont(osmed)	1		1		—	
gemässkont-smed	—		1		6	
europkont	—		1		3	
euraskont-smed	—	*5,26*	—	*5,13*	2	*9,32*
gemässkont-opralp	—		—		2	
gemässkont(-osmed)	—		—		2	
euras(kont)-smed	—		—		1	
gemässkont-osmed	—		—		1	
nokont, circ	—		—		1	
europkont(-gemässkont)	—		—		1	
gemässkont-smed(-med)	—		—		1	
(gemäss)-kont(-smed)	—		—		1	
nokont(-pralp)	—		—		1	
oroph. süd.eur.	1		1		—	
oroph.w.kont-eur.	—		1		—	
oroph.medit.	—	*1,32*	1	*3,42*	—	
oroph.therm.euras	—		1		—	
not determonated	3	*3,95*	5	*4,27*	7	*2,25*
Total	76		117		311	

I — Trifolio-Polygaletum azureae from Bjelasica
II — Ranunculo-Pancicietum serbicae
III — Pancicion from Ozren

Tab. 4

Locality	Bjelasica				Ozren	
Community	I		II		III	
Life form	n	%	n	%	n	%
P	—		—		9	
Pn	—		1	*0,85*	1	*3,54*
Pn(Ch)	—		—		1	
Ch(Pn)	—		1		2	
Ch	6	*11,84*	9	*11,11*	*19*	*9,00*
Ch(H)	2		2		5	
Ch(T)	1		1		2	
H(Ch)	5		4		7	
H(G)	2		—		5	
H, G	—		/1		2	
H, Ch	—		—		5	
H	48	*72,37*	81	*74,36*	197	*70,42*
H(T)	—		1		3	
G(H)	1		—		1	
G	2	*3,95*	8	*6,84*	32	*10,61*
T	6	*7,89*	7	*5,98*	18	*5,79*
Not determinated	3	*3,95*	1	*0,85*	2	*0,64*
Total	76		117		311	

I — Trifolio-Polygaletum azureae
II — Ranunculo-Pancicietum serbicae
III — Pancicion from Ozren

Sulejman Redžić, Radomir Lakušić

UPOREDNA ANALIZA EKOLOŠKIH I FITOCENOLOŠKIH KARAKTERISTIKA MEZOFILNIH LIVADA SVEZE *PANCICION* LAKUŠIĆ 1966. SA PROSTORA NACIONALNOG PARKA »BIOGRADSKA GORA« I PLANINE OZREN KOD SARAJEVA

Rezime

Vršena je komparativna ekološka i fitocenološka analiza mezofilnih gorskih i subalpinskih livada sveze *Pancicion* Lakušić 1966 sa prostora N. P. »Biogradska gora« i planine Bjelasice i planine Ozren kod Sarajeva.

Mezofilne livade sveze *Pancicion* na prostoru Bjelasice razvijaju se u zoni šuma bukve i jele *Abieti-Fagetum moesiacae* Blečić et Lakušić, subalpinskih šuma bukve i javora. *Fageto-Aceretum visianii* Blečić et Lakušić 1970 i jednim dijelom u zoni subalpinskih šuma jele *Abietetum dinaricum* Lakušić 1990. Diferenciraju se na dvije asocijacije — *Trifolio-Polygaletum azureae* Lakušić 1966 i *Ranunculo-Pancicietum serbicae montenegrinum* Lakušić 1966.

Na planini Ozren, livade ove sveze razvijaju se na nekadašnjim staništima smrčevo-jelovih šuma *Abieti-Piceetum illyricum* Fuk, 1960 emend. Stef. 1963, i manjim dijelom bukovo-jelovih šuma *Abieti-Fagetum moesi-*

acae Blečić et Lakušić 1970. Diferenciraju se na sedam asocijacija — *Violeto-Festucetum fallacis* Ht 1960, *Ranunculo-Pancicietum serbicae* Lakušić 1966, *Conyzifolio-Lilietum bosniacae* Bjelčić 1966, *Pancicio-Lilietum bosniacae* Bjelčić et Lakušić 1969, *Hypochoereto-Crepidetum conyzifoliae* Redžić 1990. *Knautio-Pancicietum serbicae* Redžić 1990 i *Pediculari-Astrantietum elatioris* Redžić 1990.

U zajednicama sa Bjelasice ima nešto više elemenata jugoistočnodinarskog i balkanskog rasprostranjenja, a u zajednicama sa Ozrena alpskih i prealpskih. Proučavane zajednice su veoma dobro floristički izdiferencirane, a povezane su i preko brojnih vrsta uglavnom svojstvenih klasi, redu i svezi.

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SUMMARY

In the area of mountain Bjelasica and National Park »Biogradska gora« mesophyll meadows endemic alliance Pancicion are differentiated in two associations — *Trifolio-Polygaletum azureae and Ranunculo-Pancicietum serbicae montenegrinum.*

The mesophyll meadows of the mountain and subalpine zone of the mountain Ozren are differentiated in seven associations — *Violeto-Festucetum fallacis, Ranunculo-Pancicietum serbicae, Conyzifolio-Lilietum bosniacae, Pancicio-Lilietum bosniacae* being a little more spread, and of *Hypochoereto--Crepidetum conyzifoliae, Knautio-Pancicietum serbicae* and *Pediculari-Astrantietum elatioris,* for the time being distingctive for the monutain Ozren.

In the communities from Bjelasica and N.P. »Biogradska gora« there are more species of Dinaric and especially of Balcanic, and in the communities from Ozren there are more alpine, prealpine, subatlantic and continental species.