

VEGETATION OF THE CLASS *AMMOPHILETEA* BR.-BL. ET R. TX. 1943 IN THE SOUTHERN PART OF THE CROATIAN LITTORAL (DALMATIA)

IVO TRINAJSTIĆ

Faculty of Forestry, University of Zagreb
Svetošimunska 25, HR-10000 Zagreb, Croatia

NENAD JASPRICA

Institute of Oceanography Dubrovnik
HR-20000 Dubrovnik, Croatia

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In this short communication the floral composition of the *Echinophoro-Elymetum farcti* Gehu 1988 association has been established and stands from the Pelješac peninsula and the island of Lopud have been syntaxonomically analyzed.

Key words: *Ammophiletea*, Croatian Littoral, Pelješac, Lopud

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U ovome kratkom priopćenju prikazan je florni sastav as. *Echinophoro-Elymetum farcti* Gehu 1988 i sintaksonomski su analizirane njene sastojine s poluotoka Pelješca i otoka Lopuda.

Ključne riječi: *Ammophiletea*, Hrvatsko primorje, Pelješac, Lopud

INTRODUCTION

The eastern Adriatic coast, including the islands of the Croatian Littoral, is generally known to be mostly very steep and rocky, with a relatively deep sea even near the coast. Unlike the eastern coast, the western Adriatic coast is mostly low and sandy, and the sea near the coast is shallow. Because of these orographic con-

ditions, in eastern Adriatic coast vegetation, the coastal cliff plant communities of the class *Crithmo-Limonietea* predominate, while in the western Adriatic, the coastal vegetation is dominated by coastal sand communities of the *Ammophiletea* class.

It must be pointed out, however, that in some places along the eastern Adriatic coast smaller or larger areas of coastal sand are found, with on them more or less typically developed vegetation of the *Ammophiletea* class. The largest areas occupied by this vegetation are on the 15 km long beach Valika plaža near Ulcinj, in Montenegro (cf. TRINAJSTIĆ 1989), while within the borders of the Republic of Croatia the most typical stands are in Saplnara on the island of Mljet (TRINAJSTIĆ 1995), with more or less fragmentarily developed stands being found near Lumbarda on the island of Korčula (TRINAJSTIĆ 1974), near Nin in Ravni kotari (TRINAJSTIĆ 1989a) and near Lopar on the island of Rab (HORVATIĆ 1939).

Earlier plant-sociological research showed that of the class *Ammophiletea* the ass. *Echinophoro-Elymetum farcti* is the most completely developed in the Croatian Littoral, the still insufficiently studied ass. *Sporoboletum pungentis* being developed only fragmentarily.

The *Echinophoro-Elymetum farcti* association being generally very rare in the vegetation of Croatian Littoral, each new locality of this association merits our attention and adds to the overall picture of its floral composition. One such new locality is Pržina Cove on the Pelješac peninsula, another being and Šunj Cove on the island of Lopud. In both of these coves, coastal sand dunes (beaches) are developed – stands of psammophyte vegetation of the *Ammophiletea* class. By plant-sociological analysis, this vegetation has been found to belong to the *Echinophoro-Elymetum farcti* association.

ASS. ECHINOPHORO-ELYMETUM FARCTI GEHU 1988

From an analysis of many works dealing with Mediterranean psammophyte vegetation published by Gehu together with his numerous collaborators (cf. GEHU *et al.* 1984, GEHU *et al.* 1986, GEHU, GEHU-FRANCK 1986, GEHU *et al.* 1987) it can be seen that with the species *Echinophora spinosa* he classes *Echinophoro-Ammophiletum*, an association of a slightly higher organisational level in the successive chains of coastal sand vegetation. Since the most frequent association in the Mediterranean is *Sporobolo-Elymetum farcti*, and as this association is well developed in the Montenegrin Littoral only the stands designated by this name (cf. TRINAJSTIĆ 1989) will be discussed here. In the Croatian Littoral, the ass. *Echinophoro-Elymetum farcti* is developed best of all in Saplnara on the island of Mljet (TRINAJSTIĆ 1995).

The floral composition of the ass. *Echinophoro-Elymetum farcti* is shown in table 1 on the basis of 6 plant-sociological records. Record no. 1 originates from Saplnara on the island of Mljet, records 2–4 from Pržina on the Pelješac peninsula, and records 5 and 6 from Šunj Cove on the island of Lopud.

Table 1. Ass. *Echinophoro-Elymetum farcti* Gehu 1988

No. of veget. record:	1*	2	3	4	5	6	Σ
Locality:		Pelješac			Lopud		
Size of veget. record m^2 :	50	25	25	25	30	30	
No. of species:	10	23	24	18	7	9	
Charact. species of ass.							
<i>Echinophora spinosa</i> L.	3.3	2.3	+2	+	1.1	+	6
Charact. spec. of all. <i>Ammophilion</i> , order <i>Ammophiletalia</i> and class <i>Amophiletea</i> :							
<i>Elymus farctus</i> (Viv.) Runemark	4.4	2.3	+	+	+	+	6
<i>Medicago marina</i> L.	+2	+2	+2	+2	1.2	.	5
<i>Pancratium maritimum</i> L.	1.3	+	+	3.3	.	.	4
<i>Calystegia soldanella</i> (L.) R. Br.	+3	+2	1.1	+3	.	.	4
<i>Euphorbia paralias</i> L.	+2	+	+	1.2	.	.	4
<i>Eryngium maritimum</i> L.	+2	+	+	.	.	+	4
<i>Cyperus kali</i> Vandelli	1.2	1.1	.	.	.	.	2
Companions:							
<i>Crithmum maritimum</i> L.	.	+	+1	+	+	+	5
<i>Inula crithmoides</i> L.	.	1.2	1.1	.	+	+	4
<i>Hordeum leporinum</i> Link	.	2.2	+	2.2	.	.	3
<i>Cakile maritima</i> Scop.	+	+	+	.	.	.	3
<i>Lagurus ovatus</i> L.	.	+	+	+	.	.	3
<i>Echium italicum</i> L.	.	+	+	+	.	.	3
<i>Medicago minima</i> (L.) Bartal	.	+	+	+	.	.	3
<i>Inula viscosa</i> (L.) Aiton	.	+	.	+	.	+	3
<i>Petrorhagia saxifraga</i> (L.) Link	.	+	.	+	.	+	3
<i>Salsola soda</i> L.	.	+	+	.	.	.	2
<i>Trifolium arvense</i> L.	.	+	+	.	.	.	2
<i>Daucus major</i> Vis.	.	+	+	.	.	.	2
<i>Corynephorus articulatus</i> Beauv.	.	+	+	.	.	.	2
<i>Torilis arvensis</i> (Huds.) Link	.	+	+	.	.	.	2
<i>Cymbopogon hirtus</i> (L.) Janchen	.	+	.	+	.	.	2
<i>Briza maxima</i> L.	.	.	+	+	.	.	2
<i>Avena sterilis</i> L.	.	.	+	+	.	.	2
<i>Aethionema saxatile</i> (L.) R. Br.	.	.	+	+	.	.	2
<i>Salsola kali</i> L.	.	.	.	.	+	+	2
<i>Xanthium italicum</i> Mor.	+	.	.	.	.	.	1
<i>Vicia</i> sp.	.	.	+	.	.	.	1
<i>Ononis reclinata</i> L.	.	.	+	.	.	.	1
<i>Crepis setosa</i> Hall. fil.	.	.	.	+	.	.	1
<i>Phragmites australis</i> (Cav.) Trin.	.	.	.	.	+	.	1
<i>Tribulus terrestris</i> L.	.	.	.	.	.	+	1

* Saplunara, Island of Mljet

Floral composition analysis

As can be seen from table 1, the species *Echinophora spinosa* is designated the characteristic species of the association; it characterizes the eastern Adriatic stands of the *Echinophoro-Elymetum farcti* ass. within the alliance *Ammophilion*, the order *Ammophiletalia* and the class *Ammophiletea*.

With regard to the presence of characteristic syntaxa species of a higher rank (alliance, order, class), stands from island of Mljet (Saplunara; cf. TRINAJSTIĆ 1995) and the Pelješac peninsula (Pržina) show a normal floral composition, while those from the island of Lopud indicate that at the Šunj locality the *Echinophoro-Elymetum farcti* ass. is only fragmentarily developed.

The accompanying plants are numerous (25 species), but only the species *Crithmum maritimum* and *Inula crithmoides* occur in more than 50 % of the vegetation records.

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SAŽETAK

Vegetacija razreda *Ammophiletea* Br.-Bl. et R. Tx. 1943 u južnom Hrvatskom primorju (Dalmacija)

Ivo Trinajstić & Nenad Jasprica

Dosadašnja su fitocenološko-sintaksonomska istraživanja pokazala da je iz razreda *Ammophiletea* na području Hrvatskog primorja najpotpunije razvijena as. *Echinophoro-Elymetum farcti*, a tek fragmentarno još nedovoljno proučena as. *Sporobolium pungentis*.

As. *Echinophoro-Elymetum farcti* najljepše je razvijena u Saplunari na otoku Mljetu i to predstavlja njeno tipično nalazište u Hrvatskoj.