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BREVI NOTE / SHORT NOTES

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SOME CHARACTERISTICS OF THE FLORA AND VEGETATION IN THE KORNATI NATIONAL PARK

Alcune caratteristiche della flora e della vegetazione del Parco Nazionale delle isole Kornati (Croazia).

The Kornati islands, renowned for their beauty, represent the most dense archipelago and the most unusually shaped and divided part of the Adriatic and Mediterranean coast. About 147 islands, islets and reefs are scattered over an area of some 230 km^2. These islands are situated close to the Croatian coast south of Pašman, between Dugi Otok and Žirje. They run in four rows in parallel with the Dinaric Range and are divided by long channels and many bays. The identedness of the islands, the sea and the marine life round the islands are also extremely interesting and therefore the National Park Kornati includes not only the land but also the sea — it is also a marine national park.

The most scenic spot of the National Park are the impressive steep cliffs and crags on the last series of the islands facing the open sea, which climb vertically, sometimes ad high as 80 m, and present very attractive vegetation characteristic of vertical coastal cliffs.

Although there are traces of life from the Neolithic, the Kornati has never been permanently settled. The inhabitants of the neighboring islands of Murter, Dugi Otok, Pašman, Žirje and others, live there on a seasonal basis as they tend sheep, go fishing or engage in some agricultural work.

Once, the Kornati area was covered with *Quercus ilex* forest, but due to the unfavorable climatic conditions, geomorphological structure and especially anthropogenic factors, extensive pasture and burning, degradation of vegetation took place. Burning and pasture greatly favor the development of *Brachypodium retusum* which is resistant to burning. This species is therefore dominant in the Kornati islands. It appears in almost all plant communities. However, the region of the Kornati is relatively rich in plant species and in different sinsystematic units of vegetation.

About 300 different plant species have been recorded on the Kornati islands so far (PEVALEK, 1930; GAŽI-BASKOVA and BEDALOV, 1983a). The highest number of species belong to the Mediterranean floral element in which the Illyrian-Adriatic endemic plants such as *Centaurea ragusina*, *Pseudofumaria alba* subsp. *acaulis* (= *Corydalis acaulis*), *Genista sylvestris*, *Carduus micropterus*, *Campanula pyramidalis*, *Seseli tomentosum*, *Euphorbia wulfenii*, *Euphorbia fragifera* and *Tanacetum cinerariifolium* are important. The Illyrian-Balkan endemic species as *Colchicum kochii* and *Satureja variegata* as well as a very rare Mediterranean-Pontic species *Convolvulus lineatus* are also very interesting (BEDALOV and GAŽI-BASKOVA, 1987).

Different types of vegetation are mostly fragmentarily represented, but regenerations and succession to the climax vegetation of this area *Myrto-Quercetum ilicis* (*Orno-Quercetum ilicis myrtetosum communis*) can also be noticed (GAŽI-BASKOVA and BEDALOV, 1976, 1983b).

The most dominant community of the Kornati islands is the grassland association *Stipo-Salvietum officinalis brachypodietosum retusi*, which is resistant to pasture and burning, and gives characteristic aspect to the area, especially when *Salvia officinalis* is flowering.

The steep cliffs and crags with the *Phagnalo-Centaureetum ragusinae* association, characterized by the interesting endemic Croatian species *Centaurea ragusina* and *Pseudofumaria alba* subsp. *acaulis*, deserve a special attention.

The community *Oleo-Euphorbietum dendroidis coronilletosum emeroidis* is also of outstanding beauty with dominant species *Euphorbia dendroides* and *Coronilla emeroides*. On the Kornati islands and Dugi Otok this association reaches the northern border of its distribution area.

The halophilous *Limonietum anfracti* (*Plantagini-Limonietum cancellatae*) community is developed on the sea crags, while the *Asplenio-Umbilicetum horizontalis* association is spread on the rocky walls far from the sea.

On a somewath deeper or arable soil some grazed vegetation as *Koelerio-Festucetum illyricae brachypodietosum retusi* (*Festuco-Koelerietum splendentis brachypodietosum retusi*), *Andropogoni-Diplachnetum serotinae brachypodietosum retusi* and *Psiluro-Trifolietum cherleri* can be seen.

Some fragments of ruderal and nitrophilous vegetation such as *Scolymo-Marrubietum incani brachypodietosum retusi*, *Helichryso-Inuletum viscosae bracypodietosum retusi*, *Lavateretum ruderale* and *Urtico-Sambucetum parietarietosum* are also registered.

Swamp vegetation such as the Mediterrean variant of *Scirpo-Phragmitetum* (*Scirpo-Phragmitetum mediterraneum*), *Salicornietum fructicosae*, *Juncetum maritimo acuti* and *Vitici-Tamaricetum africanae* is also fragmentarily developed in the Kornati.

More recently, some succession stages of the primary woody vegetation *Myrto-Quercetum ilicis* have been observed. Thus, *Myrtus communis*, *Pistacia terebinthus*, *Rubus ulmifolius* as well as *Paliurus spina christi* are developed in some places, while *Quercus ilex* forest has been registered on the northern slopes of the island of Kornat.

Or further interest is the fragmented appearance of the *Cisto-Ericetum arboreae* community, represented by *Pistacia lentiscus* growing in a typical cushion shape, which gives a characteristic aspect to the greater number of the islands.

Occasionally, some cultivated areas, mostly planted with *Olea europaea*, and *Ficus carica* or *Vitis vinifera* are also observed.

Bearing in mind alla said above, the natural beauty, the exotic appearance and the flora and vegetation of the Kornati should be preserved wild and intact.

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