Velebit Range – Treasury of Croatian Flora

Velebit is for the Croats what Olympus is for the Greeks and Triglav for the Slovenes. Whereas ancient Greeks were convinced that their gods lived on Mount Olympus, and Slovenes believed in their miraculous goldhorn (Zlatorog), a mountain goat on Triglav, Croats sang, and they still do, about their flower-garlanded fairy of Velebit (Vila Velebita).

Velebit is a large mountain range, extending some 145 kilometers along the Adriatic coast and covering an area of approximately 2,270 square kilometers (Fig. 1). In clear weather, the entire range comes into view from an altitude of 8,000 meters. It looks like a massive, compact rampart, arching towards the sea. Its slopes are steep, but its ridge is wide, except in the southernmost part of the range. Its seaside slope rises 698 meters to the lowest pass and 1,757 meters to the highest summit, whereas the shorter continental slope ends on Lika plateau at 500 to 600 meters altitude. The two slopes look radically different. The maritime slope is rugged and bare, as gray or yellowish gray moonscape-like karst, laced by sparse vegetation. The continental slope, almost completely clad in dark green forests, seems tamer despite its steepness. With one side facing continental Europe and the other facing Mediterranean, Velebit is an entirely specific, astounding, and in many ways unique mountain range, molded by climate and altered by human intervention since times immemorial (1). The same holds true for its flora.

The peculiar and diverse vegetation of this cragged and often-unfriendly mountain makes it very attractive. It grows in an extraordinary environment, composed of striking karstic formations, vast forests, and wide sub-alpine grasslands, under harsh climate, characterized by strong north wind bura, droughts, rain, and snow, all within reach of the sea. The vegetation of Velebit charms the visitor with its delicacy, set off by this hostile environment, as much as with its toughness needed in the battle for survival. Specialists are attracted by the large number of unusual species, their distinctive shapes and features, unusual distribution of habitats, and especially plants of special or unique significance. This area contains habitats that are actually genuine botanical treasures. For those obvious reasons, Velebit was – and still is – one of the most frequently visited, described, and studied mountains in Southeast Europe (2).

In his fundamental work, Flora velebitica, published posthumously between 1936 and 1938, A. Degen provided a catalog of all plant species recorded on Velebit during his lifetime, the areas of their distribution, and the basic phytogeographical characteristics of the mountain range (3). While compiling his work, Degen relied on his own extensive fieldwork and used data collected earlier by other specialists and amateurs, such as P. Kitaibel, F. Waldstein, R. Visiani, J.C. Schlosser, F. Maly, V. Borbas, Lj. Rossi, J. Kümmerle, and others. Exploring Velebit between 1894 and 1914, Degen and his collaborators discovered some new species of plants, such as Sibiraea croatica (1905) and Degenia velebitica (1907). Numerous experts continued to expand and provide what we know about the flora of Velebit. The most prominent and productive were I. Horvat and I. Kušan.

Over 2,250 native plant species have been recorded in different vegetation zones and plant communities of the Velebit range. Vascular plants predominate, especially Pteridophyta and Spermatophyta. More than half of them inhabit lower regions of the mountain, its continental foothills, and coastal zone. Up to 700 species can be found in higher montane and sub-alpine zones. Together with some 200 species from the lower montane zone, Velebit’s flora comprises a total of over 900 plant species, with all of the most important endemic species of the region that extends from Senjsko bilo in the north-west to Crnopac, Tremzina, and the bend of river Zrmanja in the southeast (2).
All vegetation of Velebit forms phytocenoses, integrated communities of various plants (4,5). They evolved within the broad area of the mountain range, extending from seaside and continental foothills up to the zone of summits above the forest line. The most important phytocenoses on the maritime slope are deciduous forests of white oak, hop-hornbeam, and manna ash, scattered groves of Illyrian black pine, as well as maritime beech forests on rocky terrain. The greatest part of this slope, however, is an open rocky mountainside covered with grass Chrysopogon grryllus and savory Satureja subspicata, and rough sub-Mediterranean limestone scree slopes are characterized by Dryps jacquiniana, a Dinaric endemic plant of the Pink family. On the continental slope, montane communities are represented by tall beech forests and mixed forests of beech and silver fir, as well as a variety of highland meadows, pasturelands, and heathers. Main communities of the sub-alpine zone are stunted and gnarled sub-alpine beech forests, as well as the montane (or, in higher reaches, sub-alpine) Illyrian forest of Norway spruce of almost primeval character. Above the forest line, lusc community of mountain pine covers parts of the summit zone. The rest of this zone belongs to communities of limestone rocks and cliffs with Micromeria croatica (a Dinaric endemic) and Potentilla clusiana, as well as scree slope communities. One of them is characterized by Dryps linneana, another by Umbellularium Bunium alpinum and candytuft Iberis carnosa. The latter community is particularly important, since it can contain the extremely rare Velebit endemic Degenia velebitica, as well as Seseli matyi, a rare endemic of the Umbellularium family growing on the northwestern Dinaric Mountains. Finally, grass communities of genus Sesleria and alpine meadows rich in fesene grass Festuca pungens characterize broad stony grasslands that extend over maritime and continental sides of the summit ridge, especially in Southern Velebit. Shepherds have abandoned those most important pasturelands of Velebit only recently.

The system and distribution of Velebit’s flora has been greatly affected and continues to be affected, by plant migration and changes of conditions, which can result in replacement of entire plant generations within the phylogenetic sequence. At the same time, conditions that favor survival of native species allowed selection of unusual and rare plants and unimpeded evolution of endemics. Those are the reasons why relict and progressive endemic species are so numerous on Velebit. About seventy endemics grow on the range. Some of them are restricted to Velebit, some even to only a few locations within the range. Such is the case for the extremely rare Velebit endemic of the Mustard family, Degenia velebitica. It is a small, tufty plant, with long thin roots, small felt leaves, and conspicuous yellow four-petaled flowers (front page). Botanists call it the “jewel” of Croatian flora.

Other Velebit endemics are rock-cress Arabis croatica, bellflower Campanula fenestrellata, a Croatian variety of grayish-bell Edraianthus graminifolius, rare Sibirea croatica of the Rose family, and a beautiful blue-bell Campanula walsteiniana. The most numerous Dinaric endemics on Velebit are sandwort Arenaria gracilis, chickweed Cerastium grandiflorum, columbine Aquilegia kitaibelli, primrose Primula kitaibelliana, louse-wort Pedicularis brachyodontia, germander Teucrium arduini, savory Satureja subspicata, the blood-red lily Lilium cattaniiæ, and fesene-grass Festuca pungens. Finally, among Balkans endemics, one should mention Dinaric chickweed Cerastium dinaricum and Balkanic sub-species of rock rose Helianthemum canum. Most of these plant species are legally protected (2,6,7).

The flora of Velebit is rich in medicinal plants. Among most commonly collected and famous ones are yellow gentian, Gentiana lutea; valerian, Valeriana officinalis; deadly nightshade, Atropa bella-donna; bearberry, Arctostaphylos uva-ursi; foxglove, Digitalis ambigua; sage, Salvia officinalis; and savory, Satureja montana (2).

Some parts of Velebit (from RoZanski kukovi ridge to Stirovača forest, as well as Great and Little Paklenica gorges) have been declared national parks to protect their unique biotopes and, particularly, their flora from forest clearance and exploitation, road building, industrial development, and plunder of medicinal plants (damage inflicted by grazing and browsing is no longer significant). In year 1977, UNESCO proclaimed the whole of Velebit as the 129th World Biosphere Reserve.

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References

3 Degen AV. Flora velebitica I-IV. Budapest: Ungarische Akademie der Wissenschaten; 1936-1938.