

Ontogenetic Structure of *Scutellaria Cordifrons* Juz. (Lamiaceae) Common Fergana Valley

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Abstract: *Ontomorphogenesis and the ontogenetic structure of cenopopulations of Scutellaria cordifrons have been studied under natural conditions. A brief ecological and phytocenotic characteristic of its habitats is given. Left-sided, centered ontogenetic spectra of coenopopulations were revealed.*

Keywords: Morphogenesis, coenopopulation, coenotics, ontogenetic spectrum, senyl, generative, ontogenesis.

Introduction

Evaluation of the status of rare and endangered species in many countries of the world is based on research into the modern state of their senatorial populations. Particular attention is paid to the identification of their ontogenetic structure, as well as the analysis of the organism and population signs. The totality of the sign is formed in the ecological-phytocenotic Optimum of the species, which is important in maintaining natural populations. [5].



Cenopopulation *Scutellaria cordifrons* Juz.

In recent years, the negative effects of plant transformation on the organism and population signs of senopopulations have been observed in arid regions. The species of the constellation of *Scotellaria*, which is distributed in the Fergana Valley, is no exception to such processes. *Scutellaria* species scattered in the Fergana Valley, the scientific results obtained from the evaluation of the modern state of senopopulations, allow determining some laws related to the changes taking place in the vegetation cover. Therefore, the types of *Scutellaria* species that spread in the Fergana Valley are considered one of the pressing problems of the present day to assess the modern state of the cenopopologies, to develop measures to protect them, and to create a living collection in the conditions of *ex situ*.

Materials and methods

Scutellaria cordifrons Juz. heart-deciduous evergreen shrub with a height of 50 cm. [6,7]. The stems and branches of this plant are woody, the annual branches of which are covered with coarse hair. The leaves are green, egg-shaped, almost round or kidney-round, round, blunt, the basis is slightly heart-shaped, the edges are toothy, the fluff is flaky, the veins from the bottom are obliterated. The leaves of the rose are covered with herbivore, oblong rhombus with a long pointed tip, their edges are whole, long coarse feathers. The heel is ring-shaped, the flower is yellow, the lips are sometimes dark red. Vultures are 25-30 mm long. Blooming seeds in July-August. Nuts are edged, chamfer 1,5 mm long. They grow in mountain slopes, rocky, gavel ridges, rocks, spills of the Gorges and the Tian-Shan (the Karatag, the Talas, the Olatov, the Korjontog, the Ugom, the Pskom, the Sandalash, the Chotkol, the Kurama ridges), the Pamir-Alai (Turkistan ridges) [1,4].

In the course of the study, 8 senopopulations of *Scutellaria cordifrons*, which are distributed in different ecological-phytocenotic conditions of the Fergana Valley, were allocated.

SP 1. The first 1-cenopopulation of the plant was separated from the mountain rocks and large rock - rock ephemeroïd - mugwort community from the southern slope of the Gavasoy Mountain system, around the village of Guva in Chust District of Namangan region. N 41° 15' 38.13"; E 71° 09' 69.25"; $h = 1017\text{m}$. These senopopulations separated from gravel and native soils constitute 70-75 % of the coverage of the ground level with plants in the distributed area. 29 species were registered in the plant community, *Artemisia dracunculus* L., *Eremurus regelii* Vved., observed as dominating. As participating species, *Artemisia sogdiana* Bunge, *A. namanganica*, *Carex pachystilis* J. Gay., *Poa bulbosa* L and others are possible to show.

SP 2. 2-senopopulation separated from Namangan region Chust district Gova village Govasoy Mountain Range north-west slopes mountain rocks and large - rock ephemeroïd-mugwort community. 41° 15' 66.17"; E 71° 09' 32.76"; $h = 1072\text{m}$. The degree of projective coverage in senopopulation is 65-70%. The botanical composition of the species was relatively high in these senopopulations, reaching 26 types. In this senopopulation, was observed that *Artemisia sogdiana* Bunge, *A. namanganica* was dominant. As participating species, *A. tenuisecta* Nevski, *Salsola orientalis*, *Carex pachystilis* J. Gay., *Poa bulbosa* L. and others, they are possible to show.

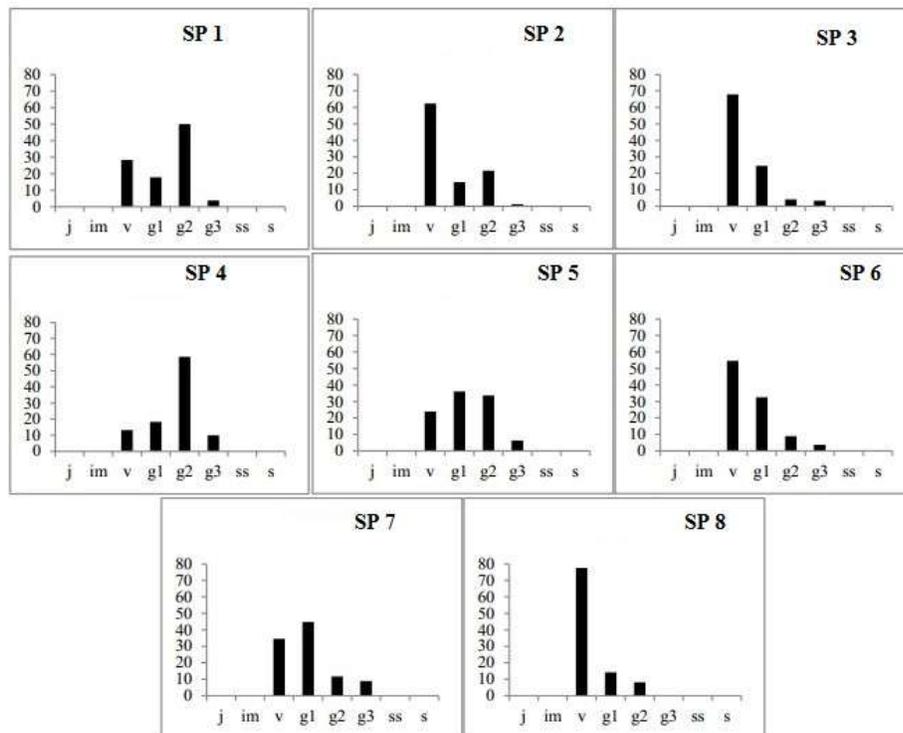
SP 3-4. The next senopopulations are located in the south-west slope of the village of Gozalabad in the Turakurgan district, on the banks of the Turakurgan-Kasan road, in the steppe and gravel, in the south-west slope of the Turakurgan district. N 41° 02' 66.23"; E 71° 50' 77.26". These ephemeroïd-different grass-wormwood senopopulations accounted for 65% of the coverage rate of the distributed area with plants, species composition of the team was 24 units.

SP 5. The next cenopopulation was separated from the various grassland communities along the roadside of the residential Madaniyat Village Pop district. N 41° 00' 74.69"; E 70° 93' 76.70". The degree of coverage with plants is 70-75%. In the plant team 27 types are occurred.

SP 6-7. The next senopopulation was allocated from various grassy-oxytropisive-wormwood communities near the settlement of the population of the hills of Madaniyat Village of Pop District. N 41°01'65,06"; E 70°92'19.08". The degree of projective coverage in senopopulation is 65-70%. The botanical composition of the species was relatively high in these senopopulations, reaching 33 types. The collars of the road of Turakurgan-Chust-chortok. N 41°02' 60.91"; E71° 50' 71.79". The level of coverage with plants is 45%. In the non-formed team there are 22 species.

Result and discussion

The ontogenetic structure of 8 cenopulations were studied in the Fergana Valley of the *Scutellaria cordifrons* Juz. was determined by the specificity of the two types of spectrum: the left-sided and the centralized spectrum. Some senopopulations are not normal and complete. In addition to a number of environmental and phytocenotic factors, the absence of juvenile, immutype and senile-age soils in senopopulations is associated with the biology of the species. Rametas ontogenesis begins in the virginian period and, as a rule, ends in the subsenyl period, in rare cases, after the old generative period. In most senopopulations, a left-sided spectrum is formed, the spectrum of which is different from the three phases of the soil, the ratio of which is different from each other. (Picture 2).



Left-sided ontogenetic spectrum of *Scutellaria cordifrons* Juz.

The peaks in the left-sided spectrum are dynamic, that is, the absolute maximum level corresponds to virginil (SP 2, 3, 6, 8) and young generative plants (SP 5, 7). The predominance of a separate ontogenetic group is determined by environmental and senotic environmental conditions and vegetative reproduction characteristics. [3]. Thus, the high peak of the virginil plants is observed in arid areas, and in young generative plants in wet conditions.

The increase in moisture also affects the intensity of vegetative reproduction (in SP 5 this is explained by the increase in the number of plants, the correct arrival of 1m² to 119,6 bushes), as well as the rapid flowering of plants (SP7). In senopopulations, the ecological density of plants varies from 10,4 to 119,6 for each m². According to the Delta-Omega classification, 2, 3, 8 senopopulations are considered to be young, while 5,6,7 SPs are ripened due to the large contribution of young generative plants. (Table 1).

Demographic indicators of *Scutellaria cordifrons* Juz. Senopopulations

(1-table)

№ SP	Degree of coverage with plants %	Density of lumps, pieces(1m ²)	ω	Δ	SP type according to Delta-Omega classification
1	75	28,75	0,79	0,36	mature
2	70	57,8	0,59	0,23	young
3	65	19,5	0,53	0,19	young
4	50	132	0,86	0,43	mature
5	75	119,6	0,77	0,34	maturing
6	65	14,8	0,6	0,22	maturing
7	70	14,5	0,68	0,28	maturing
8	45	10,4	0,51	0,17	young

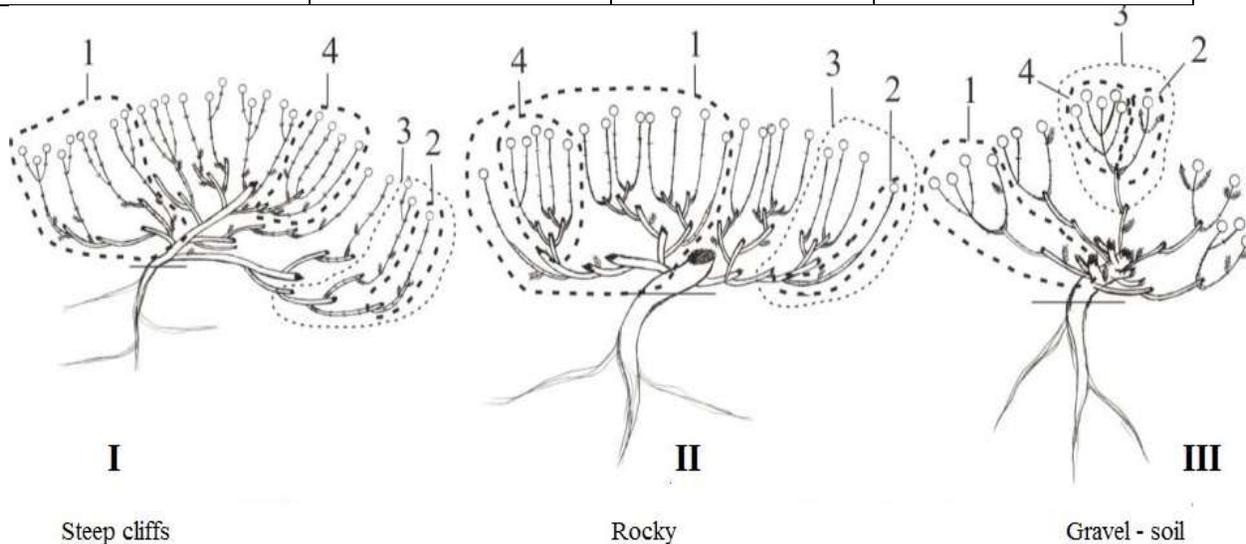
In 1 and 4 senopopulations, a centralized type of spectrum is formed. Since SP 4 is located on a sufficiently moist stony substrate in the river valley, it is possible to determine the high intensity of vegetative reproduction of plants from the indicators of

plant density (130 ind./m²). The apical buds of the stolons are often damaged as a result of mechanical impact on the stony substrate, the side lateral shoots receive intensive outbreaks. Rametas with a parsial branch system in 1 and 4 senopulations are in the middle age generative period. Both SPs are ripened (SP 1 Δ=0,36, 0,79; SP 4 Δ=0,43, ω=0,86).

Morphological diversity is expressed in the alternation and morphogenesis of the development of individual branches in different living conditions. [2].

Biometric indicators of *Scutellaria cordifrons* plant distributed in different habitats. Table 2

Parameters	Living environment		
	Steep cliffs	Rocky	Gravel - soil
Length of the initial rod, cm	5,22 ± 0,61 1,2 – 14	0–0 0–0	1,63 ± 0,31 0,3 – 7,5
Initial rod joints, pieces	7,92 ± 0,76 1 – 16	0–0 0–0	6,28 ± 0,69 1 – 20
Number of core main bases, pieces	5,48 ± 0,72 1 – 12	1,88 ± 0,12 1 – 3	3,28 ± 0,46 1 – 10
Length of core base bases, cm	6,10 ± 0,73 1,5 – 15	5,32 ± 0,51 2 – 12	2,04 ± 0,16 1 – 4
Bush diameter, cm	20,28 ± 1,43 8 – 37	13,92 ± 1,08 6 – 25	17,36 ± 0,91 11 – 27



Picture 3. Polivariantity of the development of the ripe generative *Scutellaria cordifrons* plant.

The study of the ontogenesis of *Scutellaria cordifrons* spread in the Fergana Valley revealed similarities and differences in plant morphogenesis in different ecologo-senotic conditions. In all living environments, they undergo the same phases of morphogenesis as each other: the initial rod-branched, the initial rod-the initial bush. Until the generative period of vegetation, parts of onground branches develop as shrubs without destruction. This is facilitated by the rapid development of plants before the generative period and the anisotropy of branches. The structure of the adult plant Woody branched branches in the structure is caved in the state of the completed branched base-core-axis system, which in 2-3 years grows monopodially and partially perishes. The multi-variability of ontogenesis and the feature of perennial body foundation construction of various types of branches serve as a morphological step to the germination of the plant species under different conditions.

Thus, the studied cenopulations of the *Scutellaria cordifrons* Juz. were normal, incomplete and in different living conditions formed two types of spectrum: the centralized and the left-sided type. The peaks of the left-sided ontogenetic spectrum at different ages are determined by the moisture level of the substrate. And the centralized spectrum was formed due to the high rate of vegetative reproduction in the stony substrate of the plant community.

Conclusion

For the regions under study, the instability of precipitation in the summer period affects the number of juvenile and immature plants in the senopopoly. The formation of several types of ontogenetic spectra is associated with changes in the process of plant development in different ecological-senotic conditions.

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