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SYSTEMATICAL STRUCTURE, GEOGRAPHICAL AREAL CLASSES AND ECOLOGICAL GROUPS OF ROSA L. GENUS SPREADING IN THE FLORA OF NAKHCHIVAN AUTONOMOUS REPUBLIC

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СИСТЕМАТИЧЕСКАЯ, ФЛОРИСТИЧЕСКАЯ И ЭКОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА ВИДОВ РОДА *ROSA* L., РАСПРОСТРАНЕННЫХ В НАХИЧЕВАНСКОЙ АВТОНОМНОЙ РЕСПУБЛИКЕ

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Abstract. The article presents data on the systematical structure, ecological groups, and areal classes of Rosa L. genus spread in the flora of the Nakhchivan Autonomous Republic. As a result of researches in the Nakhchivan Autonomous Republic, the concept of 30 species of *Rosa* L genus was developed and spreading of these species by vertical heights, as well as geographic range classes based on regional and zonal principles, were determined.

Аннотация. В статье представлена систематическая, флористическая и экологическая характеристика видов рода *Rosa* L., распространенных в Нахичеванской автономной республике. В результате исследований была разработана концепция 30 видов рода *Rosa* L. и определено распределение этих видов по вертикальным высотам, а также флористическим регионам на основе региональных и зональных принципов.

Keywords: Rosa, areal classes, ecological groups, systematical structure, hybrid forms.

Ключевые слова: Rosa, флористические регионы, экологические группы, систематическая структура, гибридные формы.

Introduction

Either cultivated or wild plant biodiversity has undergone natural historical, ecological, and anthropogenic impacts. The people don’t always make use of these resources efficiently at all. So that, people cut the forests, destroy the habitat of the plants, more cattle graze in the hayfields and pastures, which are the main food basis of animal-husbandry, inhibit the natural re-growth vegetation by carrying out intensive mowing process in the meadows around the forests, clearing off the forests, foster the lands to fall out by becoming salty. Instead, greenery and natural re-growth measures are less focused on. Consequently, the process of erosion accelerates and the flora composition of forests, lawns, pastures are changing. Initial plant cover perishes; their space is occupied by less significant secondary plants. In such plant phytochromes the amount of nutritious, herbal, honey-giving, oily, and other useful species is decreasing, which are regarded as valuable for

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their farming significance. Harmful, poisonous, and weed plants prevail among them which are not eaten by cattle.

For this reason, exploration of taxonomic composition, ecological groups, areal types and classes, their importance, and the role of vegetation of dog-rose species spread in the flora of Nakhchivan AR is considered to be essential.

Materials and Methods

The researches have been implemented since 2018. Different regions of Nakhchivan AR are chosen as the research territory while species with Rosa L. genus have been selected as an object.

In the specification of species, the following works have been used Vascular plants of Russia and the Commonwealth of Independent States (within the former USSR) by S. K. Cherepanov [1], Analysis of flora of the Caucasus by A. A. Grossgeim [2], Flora of Azerbaijan [3], Taxonomic spectrum of the Nakhchivan Autonomous Republic flora by A. M. Ibrahimov, T. H. Talibov, A. V. Matsyura [4], methodical aid titled In the territory of Nakhchivan Autonomous Republic the trees and shrubs of the Rosaceae family by A. Sh. Ibragimov, M. Z. Piriev, D. Sh. Ganbarov [5], Notes on the origin of species *Rosa foetida* Herrm. *var. bicolor* (Jacq.) E. Willm. by A. M. Iskenderov [6], "Roses. Phylogeny and systematics." by V. G. Khrzhanovsky [7], Red Book of the Republic of Azerbaijan [8].

Experimental part

Dog-rose species are met in various growth environments of Nakhchivan AR. They are met from plains to sub-Alpine and Alpine zones, in the suburbs of the forests, in the shrubs, in the river sides and in rocky areas [9–10].

One of the leading families in the plant cover of Nakhchivan AR is *Rosaceae* Adans. During the research that we carried out, 30 species of *Rosa* L. genus have spread in the area of research.

Table.

TAXONOMIC STRUCTURE, ECOLOGICAL GROUPS,
AREAL CLASSES OF DOG-ROSE SPECIES SPREAD IN THE FLORA OF NAKHCHIVAN AR

№	*The name of species*	*Ecological groups*	*Areal classes*
1.	*Rosa canina* L.	Mesophyte	Western palearctic
2.	*R. teberdensis* Chrshan.	Mesophyte	Caucasus
3.	*R. villosa* L. (*R. pomifera* Herrm.)	Mesophyte	Mediterranean
4.	*R. corymbifera* Borkh.	Mesophyte	Europe
5.	*R. orientalis* Dupont ex Ser. (*R. atropatena* Sosn.).	Mesophyte	Atropatena
6.	*R. tomentosa* Smith.	Mesophyte	Europe
7.	*R. multiflora* Thunb.	Xeromesophyte	Caucasus
8.	*R. chomutoviensis* Chrshan. et Laseb.	Mesophyte	Caucasus
9.	*R. floribunda* Stev. in Bess.	Mesoxerophyte	Europe
10.	*R. tuschetica* Boiss.	Xeromesophyte	Caucasus
11.	*R. pulverulenta* Bieb. (*R. azerbajdzhanica* Novopokr. et Rzazode).	Xerophyte	Atropatena
12.	*R. foetida* Herrm.	Mesophyte	Front Asia
13.	*R. nisami* Sosn.	Mesophyte	Atropatena
14.	*R. sachokiana* P. Jarosch.	Xerophyte	Alban
15.	*R. marschalliana* Sosn.	Mesophyte	Caucasus
16.	*R. karjaginii* Sosn.	Mesophyte	Atropatena
17.	*R. zangezura* P. Jarosch.	Mesophyte	Atropatena
18.	*R. iberica* Stev. ex Bieb.	Xerophyte	Small Asia, Caucasus
19.	*R. sosnovskyana Tamamsch.*	Mesophyte	Caucasus

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№	The name of species	Ecological groups	Areal classes
20.	*R. buschiana Chrshan.*	Mesophyte	Caucasus
21.	*R. rapinii Boiss.*	Xerophyte	Front Asia
22.	*R. haemisphaerica Herrm.*	Xeromesophyte	Front Asia
23.	*R. myriacantha DC. (ratschatyrdagı Chrshan.).*	Xerophyte	Atropatena
24.	*R. pimpinellifolia L. (R. spinosissima L.).*	Mesoxerophyte	South palearctic
25.	*R. kazarjanii Sosn.*	Mesophyte	Atropatena
26.	*R. hracziana Tamamsch.*	Xerophyte	Atropatena
27.	*R. subafzaliana Chrshan.*	Xeromesophyte	Front Asia
28.	*R. afzeliana Fries.*	Xeromesophyte	Atropatena
29.	*R. brotherorum Chrshan.*	Xeromesophyte	Atropatena
30.	*R. boissieri Crep.*	Xerophyte	Atropatena

As species of *R. nisami* Sosn. and *Rosa karjaginii* Sosn. noted in the table above, spread in minimum amount in small areas and became endangered natural resources. They were included into Red Books of Azerbaijan and Nakhichevan AR and *R. tuschetica* Boiss., *R. sosnovskyi* Chrshan., *R. rapinii* Boiss. & Balansa, *R. pimpinellifolia* Bunge, *R. foetida* Herrm. were included into the Red Book of Nakhchivan AR for efficient and consistent usage [8, p. 385–405].

Figure 1. *Rosa rapinii* Boiss.

Figure 2. *Rosa nizami* Sosn.

Environmental factors are too various. Water is of great significance as an ecological factor in spreading of the plants to vast areas, in different climatic conditions, in distribution to various territories and in formation of different classifications. According to the areas compatible to different humidity degrees, plants are distinguished from each other for various ecological groups (Table).

Mesophytes among *Rosa* genus is represented by 15 species and it makes up 50% of total species present in the flora. Mesophytes include the species as *R. canina* L., *R. kazarjanii* Sosn., *R. sosnovskyi* Chrshan., *R. tomentosa* Sm., *R. orientalis* Dupont ex Ser. and so on.

Xerophytes are drought resisting plants. When water increases on the land, they make it vaporize. Xerophytes can absorb water from very wide areas thanks to strongly evolved root system.

When there is potent drought period, height growth of the plant halts, its leaves come off gradually. Xerophytes with *Rosa* species are represented by 7 species and this constitutes 23.33% of total species in the flora.

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Xeromesophytes include *Rosa brotherorum* Chrshan., *R. afzeliana* Fr., *R. subafzaliana, R. hemisphaerica* Herrm., *R. tuschetica* Boiss., *R. multiflora* Thunb. while mesoxerophytes are *R. pimpinellifolia* Bunge, and *R. floribunda.*

Figure 3. *Rosa corymbifera* Borkh.

During the researches, geographical and areal classes have been ascertained on the basis of zonal and regional principles of species included in *Rosa* genus spreading in the territory of Nakhchivan AR (Table).

Reflecting the bond between the flora of the region and the flora of big territories covering this region, where the areal types of species are researched leads to the exploration of migration ways from historical point of view.

As seen from the Table, Atropatena (11), Caucasus (10), Front Asia (4), Europe (4) areal classes are prevalent and this accounts for 87.87% of the total species. The rest areal classes include 4 species, and this comprises 12.12% of the total species in the flora.

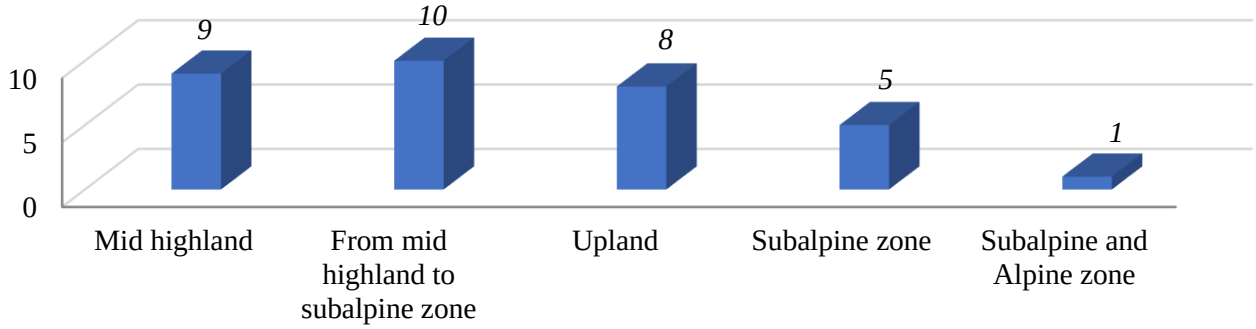

Figure 4. Spreading of hips species according to zone.

While defining the species pertaining to Rosa type according to altitudes, 5 physically-geographically differing vertical zones have been taken and their ecological condition, their spreading altitudes have been specified and regularities have been explored. The diagram reflects spreading of species according to vertical altitudes (Figure 4).

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There appeared some hardships in exact determination of borders of species in noted zones. So, there are such species that were met only in one zone, while species belonging to Rosa genus come across in some zones. For instance, *R. hemisphaerica* Herrm., *R. hracziana* Tamamsch., *R. sachokiana* Jarosch. and other species are met around-forest shrubs of mountains, while *Rosa canina* L., *R. orientalis* Dupont, *R. sachokiana* Jarosch., *R. pimpinellifolia* Bunge and others come across in the bushy slope from mountainous zones to sub-Alpine zones.

Undoubtedly, carried out researches do not reflect the species completely belonging to *Rosa* L. genus that spread in the territory of Nakhchivan AR. In our further researches, exploration of those species in detail is considered appropriate.

Conclusion

1. As a result of the carried out researches, the concept of 30 species of *Rosa* L. genus in the territory of Nakhchivan AR has been prepared and it has been ascertained that those species have spread in vertical altitudes.

2. According to ecological groups, mesophyte species are represented by 15 (50%) xerophytes 7 (23.33%), mesoxerophytes 2 (6.66%), xeromesophytes 6 (20%) species respectively.

3. According to the analysis of the species for areal classes, Atropatena (11), Caucasus (10), Front Asia (4), Europe (4) areal classes are prevalent and this accounts for 87.87% of the total species. Western Palearctic, Southern Palearctic, Small Asia-Caucasus, Alban areal classes include only 4 species, and this makes up 12.12% of the total species in the flora.

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