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ENDEMIC PLANTS OF THE SUMGAYITCHAY RIVER BASIN (AZERBAIJAN)

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ЭНДЕМИЧНЫЕ РАСТЕНИЯ ФЛОРЫ БАССЕЙНА РЕКИ СУМГАИТ

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Abstract. In the course of the study, endemic plants of the flora of the Sumgayitchay River basin were studied. A total of 265 species of endemic plants were studied, of which 215 species are characteristic of the Caucasus and 50 species are naturally distributed in the endemic zone of Azerbaijan. Endemic plants of the flora of the Sumgayitchay River basin are systematically analyzed for the presence of taxa. Of the 215 Caucasian endemic species, 36 species belong to the family Asteraceae, 27 to Fabaceae, 17 to Brassicaceae, 16 to Rosaceae, 14 to Poaceae, 14 to Caryophyllaceae and 10 to Ranunculaceae. Of the 266 species of higher plants listed in the Red Book of Azerbaijan, 62 rare and endangered plants are common in the Sumgayitchay River basin. Plants with a new habitat were taken into account, a new distribution area of 14 plant species was determined. The Ministry of Ecology and Natural Resources of the Republic of Azerbaijan has submitted proposals for the conservation of the region's biodiversity and the protection of flora.

Аннотация. В ходе исследования были изучены эндемичные растения флоры бассейна реки Сумгаит. Всего было изучено 265 видов эндемичных растений, из которых 215 видов характерны для Кавказа и 50 видов естественным образом распространены в эндемичной зоне Азербайджана. Эндемичные растения флоры бассейна реки Сумгаит систематически анализируются на наличие таксонов. Из 215 видов кавказских эндемиков 36 видов относятся к семейству Asteraceae, 27 к Fabaceae, 17 к Brassicaceae, 16 к Rosaceae, 14 к Poaceae, 14 к Caryophyllaceae и 10 к Ranunculaceae. Из 266 видов высших растений, занесенных в Красную книгу Азербайджана 62 редких и исчезающих растения распространены в бассейне реки Сумгаит. Учтены растения с новым местообитанием, определен новый ареал распространения 14 видов растений. В Министерство экологии и природных ресурсов Азербайджанской Республики представлены предложения по сохранению биоразнообразия региона, защите флоры.

Keywords: endemic, subendemic, flora.

Ключевые слова: эндемик, субэндемик, флора.

Introduction

The main reason for the richness of the flora of the Sumgayitchay River basin and the spread of phytocenoses is explained by the influence of physical and geographical conditions of the area, as well as natural and ecological factors. Research has been carried out to study the flora of the Sumgayitchay region by studying factual materials, numerous geobotanical works and literature [1].

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For this purpose, a biomorphological and systematic analysis of the modern flora of Azerbaijan and the Kurakchay River basin, as well as the flora of the studied Sumgayitchay River basin was conducted [7, 10].

In the research work, plant life forms, ecological and geographical area, endemism, rare endangered and new distribution areas included in the Red Book and phytomeliorant plants were studied on a scientific basis.

The article examines the endemic plants of the flora of the Sumgayitchay River basin, the number of endemic plants found in the region is compared with the number of endemic plants found in the Kurakchay River basin.

It should be noted that the solution of problems related to the study of endemism provides a basis for a detailed explanation of the development and evolution of flora, which is the sum of plant species. In particular, the classification of endemic taxa (season, genus and species) was considered one of the main criteria used in floristic and geobotanical zoning to identify geographical elements (habitat types and classes).

The main purpose of the research was to study the endemic plants found in the Sumgayitchay River basin flora and to compare them with the number of endemic plants of Azerbaijan and endemic plants of the Caucasus. The article also includes a table comparing the endemics of the Sumgayitchay River basin with the endemics of the Kurakchay River basin.

Materials and Methods:

For conduction of the relevant research, materials from several scientific kinds of literature, namely the eight-volume monograph “Rare trees and shrubs of Azerbaijan”, “Azerbaijan Dendroflora” were used [4, 5].

Inspected endemic species of Azerbaijani flora and determined the distribution of 262 species belonging to 39 families and 116 genera [6].

Noted that it is not enough to specify endemics by their habitats [11]. Because this creates confusion and controversy, these authors consider it important to determine endemics not by habitat, but by criteria that are more objective. In this regard, they propose a criterion or criterion for grouping endemics according to their origin. As noted in the works of many researchers and botanists, the analysis of endemism depends on its indicators, and according to their research, 1153 species of endemic plants were formed in the Caucasus and 240 in Azerbaijan.

Results and Discussion

The analysis of the flora of the Sumgayitchay region shows that 265 species of endemic plant species are naturally distributed in the flora of the Sumgayitchay region. Of these, 215 species (81.1%) are endemic to Caucasus and 50 species (18.9%) are endemic to Azerbaijan (Table 1).

Endemics in the flora of the Sumgayitchay River basin were compared with endemics in the flora of the Kurakchay River basin, and the results obtained are given in Table 1.

Table1

COMPARISON OF ENDEMICS IN THE FLORA OF THE SUMGAYITCHAY RIVER BASIN WITH ENDEMICS IN THE FLORA OF THE KURAKCHAY RIVER BASIN

Area of endemics	*In the flora of the Kurakchay River basin*		*In the flora of the Sumgayitchay River basin*	
	Number	*%*	*Number*	*%*
Caucasus	108	85.7	215	81.1
Azerbaijan	18	14.3	50	18.9
Total:	126	100	265	100

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As a result of the research, it was found that there are 108 species (85.7%) of Caucasian endemic plants in the Kurakchay River basin and 18 species (14.3 %) of endemic plants with Azerbaijani habitat [9].

According to this indicator, the number of endemic plants in the Kurakchay River basin is 2.1 times less than in the Sumgayitchay River basin. In the flora of the Sumgayitchay River basin, endemic plants of the Azerbaijani habitat consist of 20 families, 36 genera and 50 species of plants. Based on ecological-geobotanical descriptions recorded in the vegetation of the Sumgayitchay region, as well as referring to several literature sources on its flora, the identification and distribution of Caucasian and Azerbaijani habitats in the area were revealed. In particular, the species of phytocenoses include Caucasian species: *Populus ×canescens, Quercus iberica, Acer trautvetteri, Rubus buschii, Astracantha denudata, Astragalus onobrychioides, Trifolium fontanum, Medicago ×caucasica, Salsola nodulosa, Thymus collinus, Cirsium lappaceum, Artemisia szowitziana*, etc. species are encountered.

In the flora of the region, it is possible to note the distribution of endemic species of Azerbaijan: *Acantholimon schemachense, Thymus hadzhievii, Onobrychis vaginalis, Astragalus maraziensis* and others.

According to research, 800 species of endemic plants are distributed in the flora of Azerbaijan (endemic to the Caucasus and Azerbaijan) [1] (Table 2). Of these species, endemic plants of the region belong to 215 Caucasian species (65.6 %) and 50 species (15.3 %) are endemic to Azerbaijan (Table 2).

Table 2

COMPARATIVE ANALYSIS OF ENDEMICS, RARE, ENDANGERED PLANT SPECIES IN THE FLORA OF THE SUMGAYITCHAY RIVER BASIN AND INCLUDED IN THE RED BOOK WITH THE “FLORA OF AZERBAIJAN” [2, 8]

Area of endemics	*In the flora of Azerbaijan*		*In the flora of the Sumgayitchay River basin*	
	Number	*%*	*Number*	*%*
Caucasus	560	52.5	215	65.6
Azerbaijan	240	22.5	50	15.3
Red book	266	25.0	62	19.1
Total:	1066	100	326	100

Conclusion

In the flora of the Sumgayitchay River basin, research has been conducted on rare and endangered species and included in the Red Book of Azerbaijan.

It should be noted that 266 species of higher plants are included in the Red Book of Azerbaijan.

The protection of rare, endangered species listed here in the Red Book is important in terms of environmental protection in the implementation of phytomeliorative measures.

Previously announced endemic plants of the Caucasus and Azerbaijan were recorded during geobotanical surveys of forests, summer and winter pastures, as well as Altiagaj National Park, as well as municipal pastures in the Sumgayitchay River basin.

Altiagaj National Park was established on August 31, 2004, in the Khizi and Siyazan districts for the protection of flora and fauna in the Sumgayitchay basin [3].

The protection of the dendroflora of the basin allows the use of natural resources, and the results of geobotanical research allow the protection of forest phytocenoses in the area.

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In this regard, recommendations based on scientific sources on the protection of endemic, rare and endangered species recorded in the forest phytocenoses, as well as the flora of the basin, included in the Red Book of Azerbaijan are offered.

It should be noted that the Red Book lists plants belonging to the relevant categories of extinction, including rare species (species that are declining in number and found in small areas). Endangered species, on the other hand, become extinct because of adverse factors, shrinking in number and range and reaching crisis levels.

Because of the study, it was found that the flora of the Sumgayitchay basin includes 62 species of rare and endangered plants belonging to 30 seasons and 50 genera.

At the same time, out of 1493 species of higher plants distributed in the basin flora, 215 species (14.3%) are Caucasian, and 50 species (3.3%) are endemic plants with Azerbaijani habitat, the protection of which is an important problem. Therefore, due to the spread of rare and endemic plant species in the flora of the area, grazing cattle in the rocky areas of the mountainous areas of the basin (to protect pteridophytes) should be prohibited. At the same time, when carrying out phytomelioration measures in the area, it is expedient to protect endemic, rare and endangered species in the vegetation.

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