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Taxonomical spectrum of daridagh mountain of the Nakhchivan autonomous republic

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Abstract
The article provides information on the identification of families included in the Daridagh massif, comparative analysis of genera and species belonging to the families, compilation of taxonomic spectra. The vegetation of the area is mainly xerophytic plants. The flora of the Daridag area consists of 277 species of plants belonging to 46 families and 167 genera. This is 3.69% of the flora of the Caucasus, 5.54% of the flora of Azerbaijan and 9.14% of the flora of the Nakhchivan Autonomous Republic. Brassicaceae Burnett is the first species in the flora of the area with 26 genera, and Asteraceae Dumort is the first family with 44 species.

Keywords: daridagh massif, taxonomic structure, comparative analysis, number of genera, number of species

1. Introduction

The flora of the Nakhchivan Autonomous Republic has a rich and colorful vegetation compared to other botanical and geographical regions of Azerbaijan. Due to the richness of flora of the region, it has always aroused interest, as it differs distinctly from other botanical and geographical regions of Azerbaijan, as well as the Caucasus. This is primarily due to the very complex geological and geomorphological structure of the natural conditions of the region. The severe continental climate, with little rainfall, dry weather, rainless and hot summers, cold winters, high temperature-amplitude differences between days and seasons, affected the formation of vegetation and weakly monolithic, ie xerophytic plants. led to its development. These factors have affected not only the plains and middle mountains, but also the vegetation of the highlands. In addition to physical factors, anthropological factors also play a role in the formation of vegetation.

Due to the arid and continental climate in the Autonomous Republic, the vegetation and its vertical and horizontal zoning differ distinctly from other regions of Azerbaijan. Thus, while the vegetation cover is the same, in the Kur-Araz lowland, the deserts cover an area of 28-350 m in height, and in the autonomous republic 600-700 m and 1100 m. Frigana-type xerophyte vegetation at 1100-1200 m and 1500 m, mountain-steppe vegetation at 1500-1700 m and 1900 m, cariga or meadow-steppe vegetation at 1900-2350 m, xerophytic shrub meadows, sometimes small forests, 2350- 2500 m subalpine vegetation (meadows or meadow-steppe vegetation), and at altitudes of 2400-3500 m, subalpine and small-sized alpine meadows and alpine carpets are distinguished by their diversity over large areas.

The wildlife biodiversity of the area includes 3031 species of higher spores, bare-seeded and cover-seeded plants of 170 families and 874 genera. This richness is primarily due to the fact that the flora of the Autonomous Republic is closely linked with the flora of the Mediterranean and Asia, including Iran. Another reason for this is the presence of vertical zoning in the area.

The taxonomic units, role, structure and meaning of these vegetation coverings are different; some spread over large areas and form micro-zones, while others spread over small areas to form micro-cenoses, occurring and forming locally within the zone.

Taking into account the above, it is considered expedient to study and research the flora of Daridagh.

Daridagh Range is a lowland mountain range in the Julfa region, located at the far south-western end of the Demirlidagh-Goydag branch, which separates southwest of the Zangazur Range, and it is an independent morphostructure that acts as a natural extension of the earth's surface. It stretches 16 km from the Yayci plain in the south-east to the north and north-west to the left bank of the Alinjachay. The highest peak is Daridagh (1927.4 m). Other peaks of the range are Pilar (1562.6 m), Shahgarash (1430.6 m), Dikdash (1411.0 m) and Kasandag (1102.1 m). The slopes are sharply fragmented and steep. The Daridagh mineral water deposit is located in the south-east of the range.

The main object of our research was the area of the south-eastern, south-western, north-western, north-eastern part of the Daridagh physiotherapy hospital building located on the south-western slope of the Daridagh range to the Julfa plain, as well as the Chakhchakh and Pir plains. The families included in the Daridagh massif have been identified, herbarium samples of the species belonging to the families have been collected, and the taxonomic spectrum has been compiled. During the analysis of these species, "Flora of Azerbaijan" [5], Grossheim AA. “Analysis of Flora of the Caucasus” [3], Grossheim AA. “Flora of the Caucasus” [4], “Flora of the USSR” [6], “Taxonomic spectrum of flora of the Nakhchivan Autonomous Republic” by T.H.Talibov and A.Sh.Ibrahimov [2], “Plant world of Azerbaijan” [1]. by A.Asgarov and a number of scientific works were used.

Experimental Part

The vegetation of Daridagh is mainly xerophytic. Further collection and processing of plant collection increases the interest in the xerophytic flora of Nakhchivan. The zone of mountain xerophytic plants covers the areas of Nakhchivan AR at an altitude of 1200-1600 meters above sea level. One of the characteristic features of this zone is that perennial

grasses dominate here, forming one, and often several, covers in certain areas. From the beginning of spring, one plant species replaces another. In spring, mainly annual rootstocks, bulbous plants and a number of perennial grasses grow, flower and seed rapidly. Although xerophytic cenoses grow in extremely dry conditions, they complete their development very quickly.

According to the literature and our research in the Daridagh area, the flora of the studied area is represented by 277 species belonging to 167 genera of 46 families. Taxonomic spectra of genera and species belonging to the families have been compiled and comparative analyzes have been studied (Table 1).

Table 1: Taxonomic composition of Daridagh flora

№	Families	Genera	Number of species	Total number by %
1.	CupressaceaeS.F.Gray	Juniperus L.	3	1.08
2.	Ephedraceae Dumort.	Ephedra L.	1	0.36
3.	Liliaceae Juss.	Fritillaria L.	1	0.36
		Tulipa L.	2	0.72
4.	İridaceae Juss.	İris L.	1	0.36
5.	Asphodelaceae Juss.	Asphodeline Reichenb.	2	0.72
6.	Hyacinthaceae Batsch	Muscari Mill.	1	0.36
7.	Alliaceae J.Agardlı	Allium L.	1	0.36
8.	Asparagaceae Juss.	Asparagus L.	2	0.72
9.	Poaceae Barnhart	Eremopyrum (Ledeb.) Jaub. & Spach.	3	1.08
		Aegilops L.	2	0.72
		Bromeae L.	1	0.36
		Anizantha C.Koch	1	0.36
		Avena L.	3	1.08
		Avenula (Dumort.) Dumort.	1	0.36
		Lolium L.	1	0.36
		Melica L.	1	0.36
		Stipa L.	4	1.44
10.	Araceae Adans.	Arum L.	1	0.36
11.	Ranunculaceae Adans.	Adonis L.	2	0.72
		Ceratocephala Moench	1	0.36
		Delphinium L.	1	0.36
12.	Papaveraceae Adans.	Glaucium Hill	1	0.36
		Papaver L.	5	1.81
		Roemeria Medik.	2	0.72
		Fumaria L.	1	0.36
13.	Caryophyllaceae Juss.	Acanthophyllum C. A. Mey..	1	0.36
		Coronaria Hill.	1	0.36
		Holosteum L.	1	0.36
		Silene L.	3	1.08
		Stellaria L.	1	0.36
		Scleranthus L.	1	0.36
		Paronychia Hill	1	0.36
14.	Chenopodiaceae Vent.	Anabasis L.	2	0.72
		Atriplex L.	1	0.36
		Camphorosma L.	1	0.36
		Climacoptera Botsch.	1	0.36
		Kalidium Moq.	1	0.36
		Salsola L.(Caspia Galuschko)	3	1.08
		Spinacia L.	1	0.36
		Suaeda Forssk. ex Scop	1	0.36
15.	Polygonaceae Juss.	Atraphaxis Juss.	1	0.36
		Rheum L.	1	0.36
		Rumex L.	1	0.36
16.	Plumbaginaceae Juss.	Acantholimon Boiss.	1	0.36
17.	Hypericaceae Juss.	Hypericum L.	2	0.72
18.	Primulaceae Vent.	Androsace L.	1	0.36
19.	Tamaricaceae Link.	Tamarix L.	1	0.36
20.	Reaumuriaceae Ehrenb. Ex Lindl.	Reaumuria L.	1	0.36
21.	Brassicaceae Burnett.	Aethionema R. Br.	1	0.36
		Arabidopsis (DC.) Heynh.	1	0.36
		Alyssum L.	3	1.08
		Camelina Crantz	1	0.36
		Capsella Medik.	1	0.36
		Cardaria Desv.	1	0.36
		Campyloptera Boiss.	1	0.36
		Brassica L.	2	0.72
		Chorispora R.Br. ex DC.	2	0.72
		Clypeola L.	1	0.36
		Conringia Adans.	3	1.08

		Cymatocarpus O. E. Schultz	1	0.36
		Draba L.	2	0.72
		Erophila DC.	1	0.36
		Erysimum L.	1	0.36
		Hirschfeldia Moench	1	0.36
		İsatis L.	2	0.72
		Lepidium L.	3	1.08
		Leptaleum DC.	1	0.36
		Malcolmia WtAiton	2	0.72
		Neotorularia Hedge & J.Leonard	1	0.36
		Pseudoanastatica (Boiss.) Grossh.	1	0.36
		Sameraria Desv.	1	0.36
		Sisymbrium L.	4	1.44
		Sterigmostemum Bieb.	1	0.36
		Strigosella Boiss. (Malcolmia aict. p. p.)	1	0.36
22.	Resedaceae DC. ex S. F. Gray	Reseda L.	2	0.72
23.	Malvaceae Juss.	Alcea L.	1	0.36
		Malva L.	2	0.72
24.	Celtidaceaea Link.	Celtis L.	1	0.36
25.	Euphorbiaceae Juss.	Euphorbia L.	3	1.08
26.	Rosaceae Adans.	Amygdalus L.	1	0.36
		Cerasus Mill.	1	0.36
		Cotoneaster Medik.	2	0.72
		Potentilla L.	1	0.36
		Pyrus L.	2	0.72
		Rosa L.	1	0.36
27.	Fabaceae Lindl.	Alhagi Hill	1	0.36
		Astragalus L.	21	7.58
		Caragana Fabr.	1	0.36
		Medicago L.	2	0.72
		Onobrychis Hill	1	0.36
		Trigonella L.	2	0.72
28.	Aceraceae Juss.	Acer L.	1	0.36
29.	Linaceae DC. ex Perleb	Linum L.	1	0.36
30.	Geraniaceae Adans.	Erodium L′ Her	1	0.36
		Geranium L.	1	0.36
31.	Zygophyllaceae R.Br.	Zygophyllum L.	2	0.72
32.	Peganaceae Tiegh. ex Takht.	Peganum L.	1	0.36
33.	Polygalaceae Hoffmgg	Polygala L.	1	0.36
34.	Rhamnaceae Juss.	Rhamnus L.	1	0.36
35.	Apiaceae Lindl.	Chaerophyllum L.	2	0.72
		Dorema D. Don	1	0.36
		Eryngium L.	1	0.36
		Falcaria Fabr.	1	0.36
		Ferula L.	3	1.08
		Laser Borkh.	1	0.36
		Prangos Lindl.	4	1.44
		Scandix L.	1	0.36
		Visnaga Mill.	1	0.36
		Zosima Hoffm.	1	0.36
36.	Valerianaceae Batsch	Valeriana L.	1	0.36
37.	Dipsacaceae Juss.	Scabiosa L.	1	0.36
38.	Asteraceae Dumort.	Achillea L.	3	1.08
		Acroptilon Cass.	1	0.36
		Artemisia L.	1	0.36
		Carduus L.	3	1.08
		Carlina L.	1	0.36
		Carthamus L.	1	0.36
		Centaurea L.	3	1.08
		Chamaemelum Mill.	1	0.36
		Chondrilla L.	1	0.36
		Cicerbita Wallr.	1	0.36
		Cirsium Hill	1	0.36
		Cnicus L.	1	0.36
		Cousinia Cass.	1	0.36
		Crepis L.	1	0.36
		Filago L.	1	0.36
		Helichrysum Mill.	2	0.72
		Jurinea Cass.	1	0.36
		Koelpinia Pall.	1	0.36
		Matricaria L. (Chamomilla S.F.Gray)	1	0.36
		Scorzonera L.	6	2.17

		Onopordum L.	1	0.36
		Senecio L.	1	0.36
		Taraxacum Wigg.	2	0.72
		Tragopogon L.	8	2.89
39.	Rubiaceae Juss.	Rubia L.	1	0.36
40.	Gentianaceae Juss.	Centaurium Hill	1	0.36
41.	SolanaceaeAdans.	Hyoscyamus L.	2	0.72
42.	Boraginaceae Adans.	Arnebia Forrsk.	1	0.36
		Buglossoides Moench	1	0.36
		Caccinia Savi	1	0.36
		Heliotropium L.	1	0.36
		Lappula Moench	2	0.72
		Myosotis L.	2	0.72
		Nonea Medik.	1	0.36
43.	Scrophulariaceae Juss.	Antirrhinum L.	1	0.36
		Bungea C.A.Mey.	1	0.36
		Linaria Hill	1	0.36
		Verbascum L. (Celsia L.)	4	1.44
44.	Orobanchaceae Vent.	Orobanche L.	1	0.36
45.	Plantaginaceae Juss.	Plantago L.	1	0.36
46.	Lamiaceae Lindl.	Acinos Mill.	1	0.36
		Ajuga L.	2	0.72
		Eremostachys Bunge.	1	0.36
		Hymenocrater Fisch. & C. A. Mey	1	0.36
		Lagochilus Bunge	1	0.36
		Lamium L.	1	0.36
		Marrubium L.	1	0.36
		Nepeta L.	2	0.72
		Phlomis L.	1	0.36
		Salvia L. (Arischrada Pobed., Schraderia Medik.)	4	1.44
		Scutellaria L.	3	1.08
		Sideritis L.	1	0.36
		Teucrium L.	1	0.36
		Thymus L.	3	1.08
		Ziziphora L.	2	0.72
Total:			277	100

As seen from the table, the flora of the Daridagh area includes 277 species belonging to 167 genera of 46 families. This is 3.69% of the flora of the Caucasus, 5.54% of the flora of Azerbaijan and 9.14% of the flora of the Nakhchivan Autonomous Republic. During the study of the terrestrial flora, the most common genera and species were studied.

By the number of species Asteraceae Dumort family take the first place. The family is represented by 44 species, which takes 15.88% of the study area. The next places are Brassicaceae Burnett - 40, Fabaceae Lindl. -28, Lamiaceae Lindl. -25, Poaceae Barnhart -17, Apiaceae Lindl. -16, Chenopodiaceae Vent. -11, Papaveraceae Adans. -9, Caryophyllaceae Juss. -9, Boraginaceae Adans. -9, Rosaceae Adans. -8, Scrophulariaceae Juss. -7 species. The number of species belonging to the other 35 families were recorded in 138 species, ranging from 1 to 6, which cover 35.38% of the flora of area. The genus is represented by 26 genera, which make up 15.57% of the flora. Then there are the genera that represented by - Asteraceae Dumort. -24, Lamiaceae Lindl. -14, Apiaceae Lindl. -10, Poaceae Barnhart-9, Chenopodiaceae Vent.-8, Caryophyllaceae Juss.-7, Boraginaceae Adans.-7, Rosaceae Adans. -6, Fabaceae Lindl. -6 species. The number of genera in other families varies from 1 to 5 and covers about 29.94% of the area's flora.

Table 2: Genera with the most species in the flora of Daridagh

№	Genera	Number of species	Total number by %
1.	*Astragalus L.*	21	7,58
2.	*Tragopogon* L.	8	2,89
3.	*Scorzonera* L.	6	2,17
4.	*Papaver* L.	5	1,81
5.	*Salvia L.* (Arischrada Pobed., Schraderia Medik.)	4	1,44
6.	*Stipa* L.	4	1,44
7.	*Sisymbrium* L.	4	1,44
8.	*Prangos* Lindl.	4	1,44
9.	*Verbascum L. (Celsia L.)*	4	1,44

As seen from Table 2,according to the number, the leading genus is Astragalus L. that is reprtesented by 21 species (7, 58%) . A. aduncus Willd., A. commixtus Bunge. Trautv., A. nachitschevanicus Rzazadeva s. species have been found in the stydy area.

Tragopogon L. genus consists of 8 species (2.89%), Scorzonera L. 6species (2.17%), Papaver L. 5 species (1.81%), Salvia L., Stipa L., Sisymbrium L., Prangos Lindl., Verbascum, the genera L. (Celsia L.) consist of 4 species (1.44%) each.

T. buphthalmoides (DC.) Boiss., T. graminifolius DC., T. serotinus Sons. and other species of Scorzonera L. genus S. biebersteinii, S. laciniata L., Papaver L. genus P. arenarium Bieb., P. ocellatum Woronow, Salvia L. genus S. glutinosa L., S. eriophora Boiss. & Kotschy, S. irio L., S. loeselii L., Prangos Lindl of the genus Sisymbrium L. genus P. szovitsii, P. uloptera DC., Verbascum L. (Celsia L.) genusV. pyramidatum Bieb., V. saccatum C. Kochve can be taken for example. The number of species belonging to the remaining 158 genera varies from 1 to 3, which is 77.26% of the area's flora.

Thus, the genera and species belonging to the above-mentioned families do not fully reflect the flora of Daridagh. In our future research, it is considered expedient to study the genera and species belonging to the newly encountered families in a comprehensive way.

Conclusion

1. During our researches in Daridag area, 277 species belonging to 167 genera with 46 families were identified, as well as taxonomic spectra of genera and species belonging to the families were compiled and comparative analyzes were studied.
2. The leading families in the area flora Asteraceae Dumort. - 44 species (15.88%), Brassicaceae Burnett - 40 species (14.44%), Fabaceae Lindl. - 28 species (10.11%), Lamiaceae Lindl. -25 species (9.03%) and so on. have been determined to be.
3. The leading genera in the area flora are Astragalus L.21 species (7.58%), Tragopogon L. 8 species (2.89%), Salvia L. 7 species (2.53%), Scorzonera L. 6 species (2.17%), Papaver L. 5 species (1.81%), Stipa L., Sisymbrium L., Prangos Lindl., Verbascum L. (Celsia L.) were identified as 4 species (1.44%) each.

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