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Botanical-Geographical Analysis of High Mountainous Plants of Nakhchivan Autonomous Republic Flora

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The species are grouped by geographical elements, in order to clarify the genesis and formation ways of high mountainous plants of Nakhchivan Autonomous Republic. A.A. Grossheym has shown that, the geographical range reflects the development and formation ways of species. He also noted 7 types of range.

We have defined the geographical range types, classes, and groups in accordance with zone and regional principles of Nakhchivan Autonomous Republic high mountainous plants (Table 1).

Table 1: The division of Nakhchivan Autonomous Republic high mountainous plants on the range

№	Range types	Species	Percent %	Classes	Percent %	Groups	Percent %
1	2	3	4	5	6	7	8
1	Ancient (III period forest)	48	3,97	3	12	7	5,18
	1. Ancient	13	1,07				
	2. Colchid	19	1,56				
	3. Hircan	16	1,31				
2	Boreal	412	33,96	6	24	26	19,25
	1. Holarctic	106	8,73				
	2. Paleoarctic	82	6,76				
	3. Europa	73	6,01				
	4. Western polearctic	55	4,53				
	5. Southern polearctic	44	3,62				
	6. Mediterranean Sea	52	0,04				
3	Stubborn	17	1,40	3	12	9	6,66
	1. Pennon	4	0,32				
	2. Pontic	6	0,49				
	3. Sarmat	7	0,57				
1	2	3	4	5	6	7	8
4	Xerophyte	370	30,50	5	20	76	56,29
	1.Mediterranean sea	107	8,82				
	2. Asia	78	6,43				
	3. Central Asia	51	4,20				
	4. Atropathy	91	7,50				
	5. Iran	43	3,54				

5	Desert 1.Turan 2.Pontic-Sarmat 3.Pont	65 46 12 7	6,22 3,79 0,98 0,57	3	12	2	1,48
6	Caucasus	239	19,70	4	16	11	8,14
7	Adventive	15	1,23	1	4	2	1,48
8	Cosmopolitan	14	1,15	-	-	2	1,48
9	Unknown	33	2,72	-	-	-	-
	Total:	**1213**	**100**	**25**	**100**	**135**	**100**

As it is seen in the table, the Ancient is represented by 48 species, including 3 classes and 7 groups, and it contains 3, 95% of high mountainous vegetation. These species are specially formed as a result of boreal and tropical species' combination. Ancient third period forest range type include the species such as Sorbus subfusca, Melandrium latifolium, Swertia iberica, *Symphytum asperum, Vicia balansae, Scilla caucasica, Milium schmidtianum* etc. Boreal range contains 412 species including 6 classes and 26 groups. Plants of this type are mesophytous plants which are included into sub-alp and alpine meadows, and they have spread in the forest zone of Northern Hemisphere. The plants belonged to Palearctic, Holarctic, Mediterranean Sea, and European group dominate among cold-resistant and luminous plants of high mountainous terrain. Palearctic range class include *Cystopteris fragilis, Phleum alpinum, P.pratense, Alopecurus aegualis, Calamagrostis arundinaceae, Eleocharis unigilamus, Oxyria digyna, Rumex acetosa;* Holarctic range class include *Lizula spicata, Catarbrosa aguatica, Juncus filiformis, J.bufonius, Dryopteris filix-mas, Poa nemoralis, P.palustris, P.pratensis, Dichodon schischkinii, D.cerastoides, Myosotis alpestris*; Mediterranean sea range class include *Ajuga orientalis, Prangos ferulacea, Ononis antiguaorum, Securigera varia, Lens ervoides, Hesperis matronalis, Saxifraga cymbalaria, Sedum hispancum, Pyrus syriaca, Avropa areal sinfinə Sedum album, S.annuum, Saxifraga moschata, S.exarata, Rosa floribunda, Erigeron uniflorus, E.alpinus* etc.

Species included stubborn range type, have spread on the vast desert of Europe extending from the South-East part of the Europe to the northern Kazakhstan and the southern Siberia. Plants of this type, contain the less part of total flora, and are represented by 17 species, included 3 classes and 9 groups.

Panon range class include *Verbascum speciosum, crepis pannonica, Echium rissicum* etc.; Pontic range class include *Leonurus*

cardica, Lathyrus pallescens; Sarmat range class include *Geranium linearilobum, Astragalus cornutus, Nonnea pulla, Stipa lessingiana, S.capillata, Poa bulbosa* etc.

Xerophyte range type plays a leading role on the high mountainous vegetation. The advantage of xerophyte range type helps these plants, to gain strong fitting abilities against the continental climate and the lack of moisture. Within the range of this type, Atropatics class has the most diverse group. Atropatics range class include *Allium akaka, Gadea caroli-kochii, Marendera raddeana, Valeriana tiliifolia, V. alpestris, Pyrethrum balsamita, Senecio orientalis, S. othonnae, S. lipskyi, S. racemosus, Serratula coriaxeae, Papaver persicum, Corydalis persica* etc.; Mediterranean Sea range class include *Hordeum violaceum, Briza minor, Juncus inflexus, Orchis mascula, Rumex acetosella, R.patientia, R.alpestris, P. media, Galium verum* etc.; *Asian range class include Juniperus comminus, J.sabina, Crocus artvinensis, Bistorta carnea, Minuartia oreina, M.aizoides, M.dianthifolia, Veronica orientalis, Papaver orientale, Camelina laxa* etc.; Central Asian range class include *Stipa ehrenbergiana, Bromopsis tomentella, Koeleria caucasica, k.albovii, Brassica campestri, Sisymbrium loeselii, Sorbus rooppiana* etc.; Iranian range class include Agrostis planifolia, Tresetum rigidum, Melica inaequiglumus, Agropyron puberulum, Papaver fugax, Erysimum szovitsianum, Fibigia suffruticosa. İberidella sagittata, İ. Trinervia etc. species.

Desert range type covers a vast area from xerophyte flora province to the South.

Turan range class include *Galium verum, Plantago major, İnula aspera, Lolium persicum, Orchis palustris* etc.; Pontic-Sarmat range class include *Spiraea hypericifolia, S. crenata, Leonurus cardica, Carex melanostachya* etc.; Pont range class include *Nonnea pulla, Nepeta mussimi, Symphytum asperum* etc.

In Caucasus range type are gathered the ranges of different aged elements and connected to great Caucasus Mountain Ridge by their origin. This range type is related to the Caucasian endemism because, in the great Caucasus Ridge can be found even the elements formed after the era of ice age as well as the species taken their start from the third, or may be the chalk period. Some species of this type-alpine forest and mountain xerophyte plants which migrated from their own habitants toward the South till Zangazur, Daralayaz, Iran

and small Asia-have a special importance in formation of high mountainous vegetation.

A.A.Grossheym added to Caucasus range type, Caucasus, Dagestan, Alban and Iberian regions too. Nakhchivan Autonomous Republic range type contains 239 species including 4 classes and 11 groups. Caucasus range type include *Symphytum caucasicum, Alopecurus laguroides, Bromopsis variegata, Carex tristis, Gagea alexeenkoana, G.glacialis, Allium kunthianum, Minuartia imbricata, Thymus collinus, Pedicularis crassirostris, Melampyrum caucasicum, Orobanche grosssheimii, Galium anfractum, Lonicera iberica, Campanula bayerniana, Cephalaria nachiczevanica, Erigeron venustus, E.caucasicus, Helichrysum pallasii, H.callichrycum* etc.

Plants with the adventitious type are spread very poorly. In fact, it can be explained with the ever-growing feature of the Asian class. The analysis shows the obvious superiority of Asian group over the others. Adventive range type contains 15 species including 1 class and 2 groups. This range type include *Hieracium umbellatum,Orobanche alsatica, O. caryophyllacea, Valeriana leucophaea* etc.

So, it appears from the phytogeographical analysis of high mountainous vegetation, that boreal 412 (33, 96%), xerophyte 370 (30,50%), and Caucasus 239 species (19,70%) geographical range types have more species, and it contains 84,17% of general flora (1021 species). Stubborn range, desert type, ancient (III period forest) range type, adventive range types are represented by 17 (1, 40%), 65 (5, 35), 48 (3, 95%), and 15 (1,23%) species. 1,15% of the area is occupied by 14 cosmopolitan species. 33 species are not identified which contain 2,72% of the high mountainous vegetation.

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