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Phytocenoses created by some rare and endangered leguminous spread in the territory of Azerbaijan Republic

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Abstract:

It was studied phytocenoses created by some rare and endangered leguminous and was made classification scheme based on ecological and geobotany investigations during researches carried out in the territory of Azerbaijan Republic. It has been found that phytocenoses created by some rare and endangered leguminous spread in the territory of Azerbaijan Republic consists of 1 type, 1 formation class, 5 formation groups and 5 associations. Protection of these phytocenoses determined as a result of research directly on the territory of Azerbaijan Republic makes importance by realizing "Efficient use and protection problem of the world of plants by biological bases".

Key words: phytocenosis, association, formation, forest, plain

INTRODUCTION

Leguminous plants spreading in large areas play an important role of the creating and formation of plant cover in the flora of Azerbaijan. Currently, environmental degradation, decreasing of forests, meadows, useful land for agriculture, in some places completely disapper, pollution of rivers, soil, air is caused

destroying biological diversity of some species of plants, their reduction or completely endangeration. [21].

To increase the productivity, quality of feed of phytocenoses, improve, preserve their genetic resources and their landscapes is one of the most important tasks.

Studying plant cover for currently environmental protection and effective use of natural phytocenoses which they're composition of biocenosis, as well as their protection problems on scientific basis are great important. In this regard, in recent years on issues preservation of natural resources and their efficient use in Azerbaijan Republic were taken very important decisions.

Phytocenoses created by some rare and endangered leguminous trees and perennial grasses in mountain forest-yellow soils belonging to damp subtropics in damp plain forests of Lankaran have been identified by us. The diversity of relief, wet and hot climatic conditions in this area effect as ecological factor in enrichment of dendroflora [7,17,20].

THE OBJECT AND METHODOLOGY OF THE STUDY

The object of research was the plain and relict forests (Hirkan National Park) in the administrative territory of Lankaran and Astara regions of Azerbaijan, plain forests of Talysh in low mountain range.

During researches for the first time studied phytocenoses created by some rare and endangered leguminous forming a wet plain forest belt and is made classification scheme based on ecological and geobotany investigations. It has been found that phytocenoses created by some rare and endangered leguminous spread in the territory of Azerbaijan Republic consists of 1 type, 1 formation class, 5 formation groups and 5 associations.

Researches of A.A.Grossheim [8], L.I.Prilipko [22], V.C.Hajiyev [9,10,11], G.Mammadov and others [15,16,23] have great importance studying of plant cover in forests of our Republic.

According to the Azerbaijan nature conservation law forests are protected as a very important part of the geographical environment. It is known that the forests of Azerbaijan have great importance for soil protection and water regulating significance. That's why they are included in one group of forests. A vegetation of plain forests takes a specific place among these forests.

A.A.Grossheim [8] divided plain forests of the Caucasus (example of Colchis and Talysh plain forests) into two half zones: plain forests of subtropical climate and plain forests of temperate-hot climate. The author notes, that average monthly and annual temperature in the Colchis-Talysh zone, the amount of rainfall and other climate indicators, as well as the forest cover is similar to each other.

L.İ.Prilipko [22] belonged the main part of a vegetation of plain forests to the forest plant types, as well as his compiled in his map "Plant cover of Azerbaijan" (zoom 1:1000 000) is shown spreading relict forests of Hirkan in the Talysh zone. It is noted that the territory of the Hirkan National Park has wet subtropical properties according to natural climate. These areas wasn't affected by the last chilling. Exactly for the same reason plant cover of the region is rich with endemic and relic types of the third period.

V.J.Hajiyev and S.H.Musayev [10] emphasized with noting formation of vegetation of relict forest in Astara and Lankaran regions that in there it is met appropriate forests of Hirkan a considerable part replaced with cultural subtropical plants.

G.Sh.Mammadov and M.Y.Khalilov [15] considering climate and weather conditions, as well as the ecological features of forest cover they offered it is typical humid

subtropical plain forests for the Lankaran lowland in classification of plain forests of Azerbaijan. They show that the forest cover formed in the vast area in past third period in the forests spread in the Lankaran basin and it is found everywhere in the basin.

According to the above remarks, during classification of damp planting forest vegetation consisted monodomination tree and perennial herbs of leguminous based on our ecological and geobotanical investigations divided to 1 type, 1 formation class, 5 formation groups and 5 associations and is shown these formation groups are included the appropriate form class: a) *Albizziaetum*; b) *Gleditschetum*; c) *Lathyrusetum*; d) *Lotusetum*; f) *Viciaetum*

During the geobotanical description of species found in the studied vegetation for systematization of plant names is paid attention "International Botanical Codes" [14], taxon's name, life forms, phenological phases [1,2,6], rare and endangered species [10,18,25], and at the same time during field research [3,24] different methods were used.

EXPERIMENTAL PART

During the research classification of vegetation of damp plain forest belt is given detailed information about formation groups identified by us below.

A. Albizziaetum formation group

Albizziaetum julibrissin association belongs to the Albizziaetum formation group. During the research *Albizziaetum julibrissin* has been considered main edificator as monodominant of phytocenosis.

The species content of this association is registered in relict forests in administrative territory of Lankaran and Astara regions.

Albizziaetum julibrissin creates groups with plants-*Ficus carica, Quercus castaneifolia C.A.Mey, Parrotia persica (DC.) C.A.Mey* and *Carpinus betulus L.* which names are in "Red Book". *Albizziaetum julibrissin* is relict plant species considered an ancient monument of the third period.

E.M. Gurbanov [4,5] notes that *Albizziaetum julibrissin* is met in Azerbaijan flora wildly on the eastern slope of the Talysh Mountains at 300-400 m above sea level. *Albizziaetum julibrissin* considered antique or relic, endemic species are also found in Hirkan-type forests around the Caspian Sea. In this regard it should be added that *Albizziaetum julibrissin* is also found in mountainous forests of the low mountain range in the forests of Lankaran and Astara (up to 600 m above sea level).

At the species content of the registered association in this forest 24 species are found (geobotanical description). 9 species of trees are on the first floor of phytocenosis; 10 species of bushes and lians are on the second floor; *Lathyrus miniatus, Lotus tenuis, Vicia cassubica, Briza media, Phleum pratensis* and other mesophyte perennial herbs are described on the third floor. Average height of herbs is 10-30 sm. Height of the *Albizziaetum julibrissin* is 20 meters [17,19]. Total project cover is 70-90% and the forest is found as small "spot"s.

Geobotanical description

The species composition and structure of *Albizziaetum julibrissin* formation

№	Name of biomorphic plants	Ecological groups	Abundance (in points)	Average height (m,sm)	Pheno-logical phases
1	2	3	4	5	6
		Trees			
1	Albizzia julibrissin Durazz.	mesophyte	3-4	I (20)	flow.
2	Quercus castanaeifolia C.A.Mey.	mesophyte	1-2	I (30)	flow.
3	Parrotia persica (DC.) C.A.Mey.	mesophyte	1-2	I (25)	fruit.
4	Carpinus betulus L.	mesophyte	1	I (18)	fruit.
5	Gleditsia caspia Desf.	mesophyte	1	I (16)	fruit.
6	Ficus carica L.	mesoxerophyte	1	I (15)	flow.
7	Alnus barbata C.A.Mey	mesophyte	1	I (14)	veg.
8	Sorbus torminalis (L.) Crantz.	mesophyte	1	I(13)	flow.
9	Pyrus hyrcana Fed.	mesoxerophyte	1	I (8)	flow.
		Shrubs			
10.	Prynus divaricata subs.Caspica Broniez.	mesophyte	1-2	II (12)	flow.
11.	Rubus candicans Weihe	xerophyte	1-2	II (10)	flow.
12	Mespilus germanica L.	mesoxerophyte	1-2	II (8)	flow. fruit.
13	Grataegus laganeria Fisch.et C.A.Mey	mesoxerophyte	1-2	II (7)	flow.
14	Rosa marsiliana Sosn.	xerophyte	1-2	II (1)	fruit.
15	Malus orientalis	mesoxerophyte	1	II (6)	flow.
16	Euonymus latifolia (L.)Mill.	mesoxerophyte	1	II (5)	flow.
17	Swida meyeri (Pojark.) Sojak.	xerophyte	1	II (2)	flow.
18	Cotanaster krasnowii Poyark	xerophyte	1	II (1)	fruit.
		Lians			
19	Humulus lupulus L.	mesophyte	1-2	III (80)	veg.
Perennial herbs					
20	Lathyrus miniatus Bieb. ex Stev.)	mesophyte	1-2	III (30)	mat.of beans
21	Lotus tenuis Waldst. et Kit. ex Willd.)	mesophyte	1-2	III (25)	flow.
22	Vicia cassubica L.	mesophyte	1	III (60)	flow.
23	Briza media L.	mesophyte	1	III (15)	flow.
24	Phleum pratensis L.	mesophyte	1	III (10)	flow.
The total projective cover is equal to 70-90%					

On biomorphological analysis 10 species (41,7%) from 24 which found at the species content of association are trees, 8 species (33,3%) are shrubs, 5 species (20,8%) are perennial herbs, 1 species (4,2%) is lian. On ecological groups from the same kinds

14 species (58,3%) are mesophytes, 6 species (25%) are mesoxerophytes and 4 species (16,7%) are xerophytes.

B. Gleditschetum formation group

Cleditschetum caspia association belongs to the Cleditschetum formation group. Gleditschia caspia Desf. is dominated with its monodominantion in the species content of association and creates relict forest. Researches shows that Cleditschetum caspia is found in plain forests of Talysh in lower mountain ranges. Its height reaches 20 meters, the body is thorny and has wide umbrella.

Cleditschetum caspia is a relict and endemic plant of Azerbaijan name is in "Red Book". This tree is spread in the Lankaran lowland and low mountainous zone (in Astara region) in Azerbaijan in third period [2,5,25].

V.J.Hajiyev and S.H.Musaev [10] note that species as Gleditschia caspia, Albizzia julibrissin are plants that need protection in Hirkan type forests.

C. Lathyrusetum formation group

Lathyrusetum formation is represented with Lathyrusetum miniatus association. Researched plant cover was created monodominating with the most specific type of Lathyrus miniatus M.B. ex Stev. of perennial leguminous mesophytes. These meadows registered in damp plain and in the forests spread in the lower zone of Lankaran mountain range (lowland). 18 species (on grass floor) has been described in biocenosis. Lathyrus miniatus estimated as edificator an abundance of 2-3 points in plant group. The total project cover is 60-90% and it can be used as meadow.

V.V.Hatamov [12,13] notes that, Lathyrus miniatus as a perennial grass of species belong to genus of Lathyrus (with more feed significance) is a good fodder plant.

D. Lotusetum formation group

In this formation group (Lotusetum) has been registered Lotusetum tenuis association. Plant cover of this association is met in mountain-yellow-forest lands in plain forests of Lankaran-Astara region between the lower and middle mountain ranges. In species content are described 25-30 species.

According to structure the grass cover consists of two floors. Also trees and bushes are met in the first floor, mesophytes perennial herbs in the II and III floor. The average height of Lotusetum tenuis reaches 10-60 cm. Project cover of biocenosis hesitates between 70-90%. It is considered a good fodder plant.

E. Viciaetum formation group

This formation group (Viciaetum) is represented with Viciaetum cassubica association. Species content of this association is registered in relict forests of Lankaran region (Hirkan National Park). Monodominant of plant cover Vicia cassubica L. is perennial grass and has the valuable importance of feed. Also these species are found in researched glades of humid forest. In there 20-25 species of higher plants are found. The total project cover equals 75-90%. It should be noted that Viciaetum cassubica as other leguminous characterized by protein richness for biochemical composition, lack of cellulose. Presence of such indicator again shows being valuable and important of these plants. It is clear from the investigations that, some tree and perennial grass forming damp plain forest belt and the protection of phytocenosis caused by leguminous plants having high fodder value as well as name in "Red Book" is one of the important issues.

Understanding deeply the importance of forest wealth for human life, use effectively of these resources and save them to future generations is one of the most important requirements

of time, during the research it is also an important issue protection phytocenoses formed by plants in humid plain forest plantations.

CONCLUSION

Researching of phytocenosis created by some rare and endangered leguminous trees and perennial herbs formed a wet plain forest belt of Azerbaijan is important for realizing "Efficient use world of plants on biological basis and protection problem" also it's important for the agriculture and economy at the same time.

By using identified phytocenoses with 1 type, 1 formation class, 5 formation groups and 5 associations in damp plain forest belt of Azerbaijan for strengthening feed bases, besides being a major source of feed for large and small horned animals in winter pasture fields it is important protection of rare and endangered endemic and relic leguminous tree and perennial grass plants name in "Red Book".

REFERENCES

1.Cherepanov S.K. (1995). “Vassular Plomts of Rusia and Agrosent states the former USSR”. North. American Branch. Cambridge University Press.
2.Flora of Azerbaijan. (1950-1961). Publishing House of Academy of Sciences of Azerbaijan SSR. vol. I-VIII. Baku, Azerbaijan.
3.Field geobotany (1959 to1976). Publishing house “Science”. vol. I-IV. Moscow, Leningrad.
4.Gurbanov E.M. (1996). “Plant world of Nakhichevanchay river basin”. Baku State University. Baku, Azerbaijan

5.Gurbanov E.M. (2004). "Flora and vegetation of Atropatena province (within Azerbaijan Republic)". Autoreferat of dissertation for the degree of doctor of biological sciences: 59.
6.Gurbanov E.M. (2009). Systematics of higher plants. Baku University Press. Baku, Azerbaijan.
7.Gurbanov E.M., Mammadova Z.J. (2013). The ecological-geobotanical map of some phytocenoses formed by legumes in natural vegetation of Azerbaijan. Copyright Agency of Azerbaijan Republic. Certificate #7462 about registration of work. Baku, Azerbaijan
8.Grossheim A.A. (1948). Plant cover of the Caucasus. "MOIP" Publishing house. Moscow, Russia.
9.Hajiyev V.J. (2007). Map of plant cover of Azerbaijan (scale 1:600 000). Azerbaijan State Land and Mapping Committee. Baku, Azerbaijan.
10.Hajıyev V.J., Musayev S.H. (1995). Plants and plant formations which were suggested to "Red" and "Green" books of Azerbaijan. Punlishing house of "Elm". Baku.
11.Hajiyev V.J., Kuliyeva Kh.G., Vahabov Z.V. (1979). Flora and plants cover of Talish high mountains. Publishing house "Elm", Baku, Azerbaijan.
12.Hatamov V.V. (2002). Steppe vegetation of Azerbaijan. Science: Baku, Azerbaijan.
13.Hatamov V.V. (2001). Life and use of plants in mountain ecosystems. Baku, Azerbaijan.
14.International Code of Botanical Nomenclature /Leningrad, 1975; Sidney, 1983; Saint Louis, 1999.
15.Mammadov G.Sh. and Khalilov M.Y. (2002). Forests of Azerbaijan. "Science" Publishing house, Baku, Azerbaijan.
16.Mammadova S.Z., Shabanov J.A., Guliyev M.B. (2005). Ecological monitoring of the soils of Lankaran river basin. Publishing house of "Elm", Baku.
17.Mammadova Z.J. (2011). "Leguminous plants found in various zones of Azerbaijan and rational use thereof". Scientific

works of the Institute of Botany of National Academy of Sciences of Azerbaijan, vol. XXXI. Publishing house "Science". Baku, Azerbaijan.
18.Mammadova Z.J. (2013). Agricultural importance of some rare and undangered species of leguminous family distributed at the area of Azerbaijan Republic. Scientific works of the Institute of Microbiology of ANAS. v.12. №2. Baku
19.Mammadova Z.J. (2009). Some species of genus Vicia L. with important forage value. Ganja Regional Scientific Center of National Academy of Sciences of Azerbaijan. Publishing house "Science". Ganja, Azerbaijan.
20.Mammadova Z.J. (2014). Some rare and undabgered leguminous plants and
ways of their protection. Bulletin of MRSU, "Natural sciences", №5, Moscow.
21.National Strategy and Development plan about protection and continuing usage of biological biodiversity in Azerbaijan Republic. (2006). // Was approved by the Decree of the President of Azerbaijan Republic signed at 24 March 2006. Baku.
22.Prilipko L.I. (1970). "Plant cover of Azerbaijan". "Science" Publishing house.
Baku.
23.Safarov H.M. (2010). Flora and vegetation of Hirkan National Park. Abstract of a thesis Autoreferat of dissertation for the degree of doctor of biological sciences. Baku, Azerbaijan.
24.Shennikov A.P. (1964). "Introduction to geobotany". Publishing House of the Leningrad University. Leningrad, Russia.
25.The Red Book of Azerbaijan Republic. Rare and endangered species of plants and fungi. (2013) (Second edition). Publishing House "East-West". Baku, Azerbaijan.