

Review

Wild nature of talysh, taxonomic composition, expositions and tiers of hyrcanus

Hasanova M.Yu., Mustafaeva Z.T., Alieva S.A., Ataeva L.A.

Azerbaijan National Academy of Sciences, Institute of Dendrology, Baku, AZ1044, Republic of Azerbaijan, Baku, Khazar region, settlement Mardakan, Yesenin street 89.

*Corresponding Author E-mail: zakirakademik@mail.ru

Received 6 January 2020; Accepted 29 January, 2020

The article provides information on the taxonomic composition and exposition in Girkan located in the foothills of the Lenkorana Mountain. The main goal of our expedition was to explore the natural complex, rare and endangered plant species. The biology and bioecological characteristics of plants were studied. We have organized numerous expeditions to the Hyrcanum

located in the foothills of the Lenkorana Mountain. The main goal of our expedition was to explore the natural complex, rare and endangered plant species.

Keywords: Exposition, foration, association

INTRODUCTION

Lankaran region Talysh mountain system occupies the southeastern part of the Republic of Azerbaijan. In the system of the Talysh mountain region, unlike the Greater and Lesser Caucasus, there is no zone of high mountains with a pronounced alpine belt. During the ice age, glaciation did not reach Talysh, and therefore relict wood and shrub plants were preserved here. Girkansky Nature Reserve, was created in 2005. In the National Park protected: rare, endangered and medicinal plants. With reference to the literature, 174 species of shrubs were discovered in the Hyrcanic National Park, 36 of which are endemic plants of Azerbaijan (Mammadov and Khalilov, 2003; Mammadov, 2004; Askerov, 2005; Kurbanov, 2009; Mammadov, 2010; Mammadov, 2011; Guliyev and Khalilov, 2000; Hajiyev and Musayev, 1996; Hajiyev and Musayev, 1989; Prilipko, 1954).

Purpose of work

Azerbaijan has very rich and diverse vegetation. In the flora of Azerbaijan, from 92 sources, there are 1116 species of plants, out of 266 species, including 162

endemic, 95 rare, 38 endangered species. Currently, each species present in the natural flora is in danger of destruction.

MATERIALS AND METHODS

We have organized numerous expeditions to the Hyrcanum located in the foothills of the Lenkorana Mountain. The main goal of our expedition was to explore the natural complex, rare and endangered plant species. The mountainous region is divided by deep ravines. Tourism development has quickly reduced the natural habitat of rare and endangered trees and shrubs in Talysh zones. Massive anthropogenic degradation of the Hyrcanic dendroflora, ecosystems, acute changes in the ecology and the agrarian system, the widespread use of modern achievements in the field of biotechnology and the most serious catastrophe of mankind, the change of plants, the reduction of plants with phytochemical content or the classification of plants that are threatened with complete destruction, is an urgent problem. In the flora of Girkan grow forest grapes, pancracks of the sea.

In the forests, maple, ash, various fruit trees, medicinal and endemic herbs are also widespread. In forest plots, plots without trees were recorded, xerophytic plants prevailed, and photographs were taken.

RESULTS AND DISCUSSION

The study area is very rich in biodiversity of flora; in this botanical and geographical region, rare plant species from desert to subalpine are concentrated by relief structure. The main types of forests are eastern oak and hornbeam, endemic plants grow as rare pearls of the forests of Azerbaijan: *Taxus baccata* L., *Pinus kochiana* Klotzsch ex K. Koch, *Alnus subcordata* C.A.Mey., *Juniperus foetidissima*, J., *sabina* L., *Pistacia mutica*, *Rhus coriaria*, *Pyrus hyrcana* Fed., *Pyracantha coccinea*, *Cotoneaster saxatilis* Pojark, *Acer hyrcanum* Fisch. & C.A.Mey. *Parrotia* C.A. Mey., *Quercus macranthera* Fisch. & C.A.Mey. ex Hohen. In Hyrcanus, *Danae rasemosa* Moench, *Punica granatum* L., *Albizia julibrissin* Durazz are also widespread. *Ficus hyrcana* A. Grossh., *Euonymus velutinus* E. May. *Hippophae rhamnoides* L., *Diospyros lotus* L. *Populus hyrcana* Grossh., *Zelkova carpinifolia* Pall. K.Koch., *Z. hyrcana* Grossh. & Jarm., *Ruscus Hyrcanus* L., *Rubus hyrcanus* Juz., *Rosa hraciziana* S. Tamamsch et al.

Our study revealed the areas, biological and phytosenological structure of the forest. According to the phytocenological structure, the forest vegetation of arid zones is represented by two formation classes (Figure 1). Thai forests. - Based on literature and Internet data, we note that pistachio forests comprise 1340, forests 1240, oak forests 900 hectares, woodlands 307 hectares. xerophytic woodland. In these formations, *Artemisia lerchiana*, *A.caucasica*, *A.scoparoides*, *A.szovitsiana*, *A.gropyron desertorum*, *A.pectinatum*, *Eremopyrum orientale*, *Petrosimonia brachiata*, *Bromus japonicas*, *Koeleria caucasica*, *Dactylis glomerata*, *Bothriocharemium*, is widespread *Kochia prostrata*, *Brachypodium rupestre*, *Limonium meyeri*, *Astragalus bungeanus*, *Anthemis candidissima*.

In Girkan, on tropical and subtropical, yellow, brown soils, under natural conditions, hydrophytes, mesophytes and xerophytes develop, and fruit trees, shrubs are cultivated in household plots, they grow cultivated and ornamental plants: subtropical lemon, poncrus, sweet orange, grapefruit, Japanese mandarin, tea, ordinary chestnut. Endemic plants are widespread in the Hyrcanic flora. As a result of complex factors of climate change, the bioecological properties of plants formed. The impact of various soil, climatic and relief factors on plants primarily affects their morphological, physiological, genetic, etc. characters. In the study area, the density of beech forests at altitude. 1500-1600 m above sea level, rising higher gradually the forest density decreases, forest the cover becomes thinner. The upper mountain-

forest zone is located at an altitude of 1800-2000 m above sea level. Here, forming thinned forests, the eastern oak and eastern beech are widespread. According to calculations, the average height of trees at an altitude of 1100-2000 m above sea level was 15-20 m in diameter 40-80 cm.

As the height of the study area increases, the trees thin and rejuvenation is observed. In the forest, crown and tree trunks, root systems and forest substrates on the soil surface complement each other. In this area, trees form the root system and improve the soil-aggregate composition of the soil and, like spider webs, envelop and strengthen the slopes. It has been established that a 130-140 year old oak can form 9-10 horizontal roots 10-12 meters long.

However, many trees and shrubs have reduced their habitat, and some have been endangered. Many of them lost their zonality and monodominant plants remained in small areas.

During the expeditions, the biodiversity of rare species was comprehensively studied, including the species composition, bioecological features, topography and areas of distribution of trees and shrubs. In the course of research on a scientific basis, the taxonomic composition of natural flora, ecosystem biodiversity, protection of the genetic fund were analyzed using the Engler and APG III-IV systems, and collected samples of family and herbarium were studied (Table 1). Expositions of plants consist of a forest-forming genus, as well as related genera, of tiers and undergrowth plants. Expositions include subalpine, alpine, various types of forest, meadow, steppe and desert plants. On the tiers, the trees were comparatively studied, both in height and in leaves and fruits (Table 2).

In the course of the work, the following tree species were investigated. The upper mountain forest zone is located at an altitude of 1800-2000 m above sea level: eastern beech, common beech, eastern hawthorn, common hornbeam, Georgian oak, western oak, chestnut oak, Caucasian linden, Caucasian framework, smooth framework, etc.

From shrubs in the lower tier, undergrowths on a scientific basis were studied: cotoneaster, hawthorn, blackberry, cherry plum, broadleaf spindle tree, dog rose and so on. In the Girkan forest from the thickets there are genera: *Mespilus* L., *Rosa canina*, *Paliurus* Mill, *Frangula* Mill, *Cotoneaster Medic*, *Corylus* L., *Sprea* L., *Sorbus* L., *Crataegus* L., *Rhus* L. .. The plants of the genera create specific formations and directly involved in the formation of good xerophytic mountain vegetation. The area of territories that we are exploring is subject to anthropogenic pressure (Figure 2). Environmental problems of plants and soil cover are associated with soil erosion, pollution, without the planned expansion of the territories of settlements, recreation centers and other processes. The area of the studied territories differs from other botanical and geographical regions of the Azerbaijan



Figure 1 and 2

Table 1. Hyrcan exposure.

Expositions	South	Southeast	Southwest	Northwest	Northeast
Childbirth in the forest	Quercus L. Carpinus L. Fagus orientalis L.	Quercus L. Carpinus L. Acer L.	Quercus L., Carpinus L. Fagus orientalis L.	Quercus L. Fagus orientalis L. Fraxinus L.	Fagus orientalis L. Tilia L. Carpinus L.
Close birth	Tilia L. Fraxinus L. Juglans L. Fagus orientalis L. Carpinus L.	Carpinus Fraxinus L.	Tilia L. Acer L. Fraxinus L. Quercus L. Carpinus L. Fagus orientalis L.	Carpinus L. Fraxinus L. Acer L. Tilia L. Quercus L. Palid L. Ulmus L. Celtis L.	Carpinus L. Tilia L. Acer L. Fraxinus L. Fagus orientalis L.

Table 2. Tiers of Hyrcanus.

Tiers	South	Southeast	Southwest	Northwest	Northeast
I- III tier	Carpinus L. Juglans L. Quercus L. Fagus orientalis L. Tilia L.	Quercus L. Carpinus L.	Quercus L. Carpinus L. Fagus orientalis L. Acer L. Fraxinus L.	Quercus L. Carpinus L.	Quercus L. Carpinus L. Fagus orientalis L. Acer L. Fraxinus L.
II- III tier	Juniperus L. Tilia L., Fraxinus L. Fagus orientalis L. Carpinus L. Quercus L. Acer L.	Carpinus L. Juglans L. Acer L. Fraxinus L.	Quercus L. Carpinus L. Fagus orientalis L. Fraxinus L. Acer L. Parrotia persica C.A.Mey.	Acer L. Fraxinus L. Carpinus L. Juniperus L. Tilia L. Fagus orientalis L.	Tilia L., Fraxinus L. Carpinus L. Fagus orientalis L. Parrotia persica C.A.Mey.
III- tier	Carpinus L. Quercus L.	Carpinus L. Acer L. Quercus L. Fraxinus L.	Carpinus L. Acer L. Pyrus L.	Carpinus L. Acer L. Quercus L. Fraxinus L.	Juniperus L. Carpinus L. Quercus L.
Undergrowth plants	Rosa L. Rubus L. Clematis L. Hedera L. Vitus L. Mespilus L. Rhamnus, Pyrus L., Cornus mas L. Crataegus L. Euonymus L.	Rosa L. Vitus L. Rubus L. Mespilus L. Rhamnus L. Pyrus L. Cornus mas L. Crataegus L.	Corylus L. Crataegus L. Rosa L. Mespilus L, Cornus mas L. Cotoneaster L. Pyracantha Roem., Sorbus L.,	Rosa L. Rubus L. Clematis L. Hedera L. Vitus L. Mespilus L. Rhamnus, Pyrus L., Cornus mas L. Crataegus L.	Rosa L. Rubus L. Corylus L. Clematis L. Hedera L. Pyrus L. Cornus mas L. Crataegus L.

Republic, a variety of plants as part of biocenoses. Studies were carried out accordingly, preparatory, expeditionary and desk.

FEFERNCES

Askerov AM(2005). Higher plants of Azerbaijan. Concept of the Azerbaijani flora Volume I-II-III. Baku: Science, 2005, 2006, 2008.

Guliyev VS, Khalilov MY (2000). Dendrology. Baku, 2000. p. 260.
 Hajiyev VC, Musayev SH (1989). Plants and Vegetable Forms Recommended for Azerbaijan's Red and Green Books.
 Hajiyev VC, Musayev SH (1996). Crop and Plant Forms Recommended for Azerbaijan's Red Book and Green Book Baku.
 Kurbanov EM(2009). Textbook "Systematics of higher plants". Publishing house "Baku State University", 2009, p.429.
 Mammadov Q, Khalilov MY(2003). Environmental Information Book. Publishing house "Elm". Baku: 2003.

- Mammadov TS (2004). "Ecology" Baku, "Elm", 2004.
- Mammadov TS (2010). "Trees and shrubs of Absheron" - Baku - "Science and Education" - 2010. p.194.
- Mammadov TS(2011). "Azerbaijan Dendroflora. Volume I-V. Baku " Science " Publishing House - 2011-2019
- Prilipko LI(1954). "Forest Plants of Azerbaijan" published by the Academy of Sciences of the Azerbaijan SSR, 1954.