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The Pytosociological Characteristics of Ecosystems of Mountain of Talysh Region of Azerbaijan

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Abstract: In this region forest area occur from the plain zone Quercetum, Alnussetum, Aceretum, Fagetum, Fageto-Carpinetum, Parrotietum, Querceto-Fagetum, Fageto-Quercetum, Carpineto-Fagetum, up to 1400 m, the xerophyte plants are dominant in region with frigana, pseudomaquis, steppe, rocky-stony and pebbly ecosystems between 1400 and 2582 m. The forest area are widespread in the low altitude of region and among the forest, at the high altitudes, there are some formations. These are Dianthussetum, Sedetum, Campanuletum, Spargularietum, Nepetetum, Prangosetum, Silenetum, Asperulifolietum, Iridetum, Ziziphoretum, Thymetum, Onobrychisetum, Acantholimonetum, Festuceto-Astragaletum, Pyreteto-Festucetum, Astragaleto-Acantholimonetum, Festuceto-Astragaletum, Thymeto-Astragaleto-Acantholimonetum, Ilexetum, Paeonieto-Ilexetum, Fageto-Ilexetum. There are some morphological are some changes on the stem and leaves become small, the presence of rosette, on the upper of ground the plant become coss and ball, the presence of underground, adaptation on the xerophyte plants of high mountainous zone. The members of Liliaceae, Iridaceae, Orchidaceae, families can be given for this category. Among these, 6 species belong to Iris, 5 species belong to Allium, 4 species belong to Gagea and 4 species belong to Muscari genus. These geophytes species are important for the flora of autumn and spring and they have temporary aspect for the vegetation of region. These icing of plants are characterized for mountainous ecosystem and can survive on the stony-pebbly and on the peak humus soils. In this region the plants are categorized according to their root system and 41.6% stoke root, 30.2% fringe-stake root, 16.8% fringe were determined. Bulbous, tuberous and rizomic plants have an important role on the mountainous ecosystem of phytosociological structure as a seasonally.

Key words: Talysh, pytosociological, mountain, ecosystems, Azerbaijan

INTRODUCTION

The Talysh is one of the South East of Azerbaijan. Talysh region is one of the richest regions from the point of flora and vegetation in Azerbaijan. Seven hundred and nine species from 76 families and 329 genus are seen here (Hacıyev *et al.*, 1979). Flora of Talysh shows nearness to different mountainous regions of Caucasian. This shows again the general similarity of their stage and shows its connection with flora of Tetis. It shows difference with areal groups of the Mediterranean and Middle-Asia. These groups include species of Fabaceae families which love drought. Widespread species seen here are especially *Astragalus*, *Onobrychis* and *Medicago*. With this characteristic, Talysh region is similar to the Mediterranean flora. Protection of biological diversity of biosphere in this region is one of the important problems. Among these adaptations there 517 species very determined. Among these, 26% are hairy herbs, 11.4%

bulbous, 13.3% with acicular leaves, 10.1% tuklu, with resin and oil plants, 9.55% with broad unhairy leaves, 7.9% with succulent plants, 4.8% with thorny-cossing plants, 2.3% with thorny shrub and 0.4% with needled-leaves shrubs.

The members of Liliaceae, Iridaceae, Orchidaceae, families can be given for this category. Among these, 6 species belong to Iris, 5 species belong to Allium, 4 species belong to Gagea and 4 species belong to Muscari genus. These geophytes species are important for the flora of autumn and spring and they have temporary aspect for the vegetation of region.

MATERIALS AND METHODS

Materials of this study are made up of materials which were collected from investigation of high mountain regions of Talysh in 1997-2001. It was terrified from "Land geobotanic" (Polevaya Geobotanica, 1959-1976) in land

geobotanic investigations and benefited from “Flora Azerbaydjana” in determining plants (Flora Azerbaydjana, 1950-1961). In naming formations, dominant principles have been used.

RESULTS AND DISCUSSION

As seen from plant cover of Talysh, as well as forest, steppe, frigana, wild grass, subalpine, which form zone here, plant types, water-swamp, rocky types are also characteristic (Fig. 1, Table 1). In this region distribution of vegetation types according to vertical zone is different from other regions of Azerbaijan (Fig. 2).

Nepeta transcaucasica, *Onobrychis transcaucasica*, *Zerna variegata*, *Medicago caucasica*, *Ranunculus elegans*, *Symphytum asperum*, *S. caucasicum*, *Lotus caucasicus* are widespread and characteristic in Talysh region but *Allium lenkoranica*, *A. talyschence*, *Astragalus gudrati*, *A. kosmoljanicus*, *Scutellaria*

prilipkoana, *Pimpinella grossheimii*, *Scrophularia hyrcana* are spreaded in a narrower areal and they are endemic species. Part of these endemics come into existence at the end of 3rd glacier period and at the beginning of species which has come from very old periods because this region hasn't been exposed to effect of getting icy in glacial period. Mountainous forests are widespread in Talysh's relict formations of down, middle and upper mountainous zones (Fig. 1). *Albizzia julibrissin*, *Ficus carica*, *F. hyrcana*, *Punica granatum*, *Paliurus spina-christi*, *Gleditschia caspica*, *Parrotia persica*, *Danae ramasisima*, *Quercus castaneifolia*, *Rhamnus grandiflora*, *Pyrus boissieriana*, *Alnus subcordata*, *Acer velutinum*, *A. luteum*, *A. hyrcanum*, *Fagus orientalis*, *Zelkova carpinifolia* *Prunus spinosa*, *P. mahaleb*, *Pyrus communis*, *Convallaria transcaucasica*, *Nelumbium caspicum*, *Paeonia mlokosowitschii*, *Adonis wolgensis* can be shown as widespread relict species in these forests. Plant cover

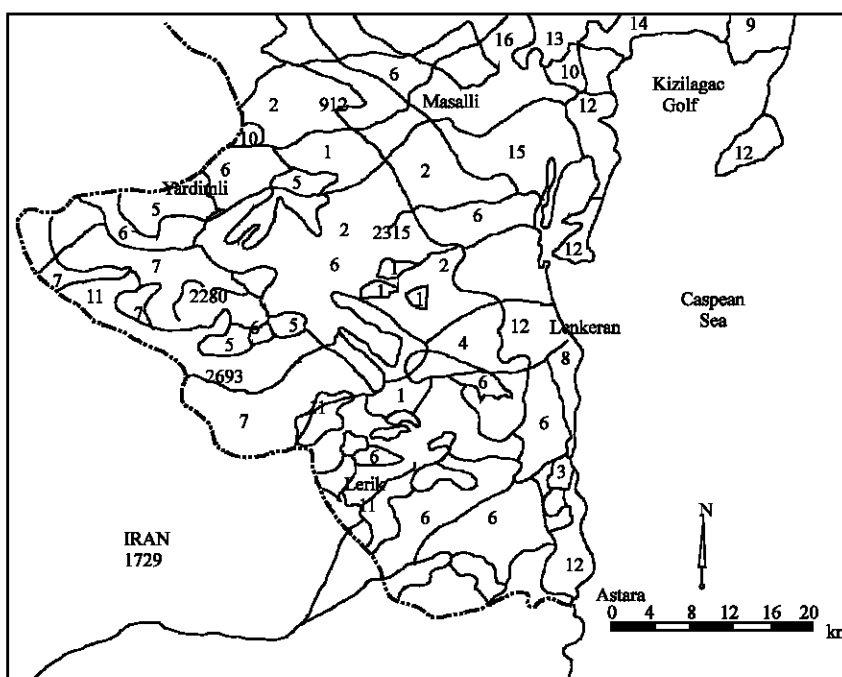


Fig. 1: Vegetation map of Talysh region in Azerbaijan

1. Mountain forests (*Quercus macranthera*, *Carpinus caucasicus*, *Fagus orientalis*), 2. Relict Hyrcanus forests (*Quercetum*, *Fagetum*, *Carpinetum*, *Parrotietum*, *Alnussetum*, *Pterocarietum*, *Ilexetum*, *Taxucetum*), 3. Orderlines forests (*Quercus castaneifolia*, *Q. Longipes*), 4. Low mountainous forests (*Quercus longipes*, *Alnus subcordata*, *Pterocaria pterocarpa*), 5. Pseudomaki (*Ilexetum*), 6. Wild grass around forest, 7. Mountain-Xerophyte vegetation, 8. Tugaj forests (*Populus hibridus*, *Acer velutinum*, *Ulmus elliptica*, *Alnus barbata*, *Salixetum*, *Tamarixetum*), 9. *Juncusetum*, 10. Wild grass-shrub (*Alhagi pseudoalhagi*, *Cunodon dactylon*, *Glycirriza glabra*), 11. Steppe (*Astragaleto-Poaetum*), 12. Shora of sea, sandy deserts (*Artemisia arenaria*), 13. Deserts with formations of *Salsolito-Artemisietum* (*Artemisia fragrans* + *Salsola dendroides*) and *Salsoletum* (*Salsola dendroides*, *S. ericoides*), 14. Dasert with formations of *Kalidietum*, *Anabazisetum*, *Halostachysetum* and *Suaedetum*, 15. Culture field of *Artemisietum* and *Artemiseto-Phryganetum*, 16. With superiority of *Poa bulbosa* and *Eremopyrum orientalis* efemerosez semi-deserts

Table 1: Vegetation types and dominant formations and species of Talysh Regions

Vegetation types	Altitude (m)	Dominant formations and species
Desert	s.l. (300)	<i>Salsolietum</i> (<i>Salsola dendroides</i> , <i>S. ericoides</i> , <i>S. nodulosa</i>) <i>Halostachysetum</i> (<i>Halostachys caspicus</i>) <i>Kalidetum</i> (<i>Kalidium caspicum</i>) <i>Suaedetum</i> (<i>Suaeda dendroides</i> , <i>S. microphylla</i>) <i>Petrosimonieta</i> (<i>Petrosimonia brachiata</i>) <i>Petrosimonieta-ephemeretum</i> (<i>Petrosimonia brachiata</i> + <i>Poa bulbosa</i> + <i>Hordeum leporinum</i>) <i>Ephemereto-Salsolietum</i> (<i>Hordeum leporinum</i> + <i>Salsola soda</i> + <i>S. crassa</i>) <i>Artemiseto-Salsolietum</i> (<i>Artemisia fragrans</i> + <i>Salsola dendroides</i>) <i>Artemiseto-Suaedetum</i> (<i>Artemisia fragrans</i> + <i>Suaeda dendroides</i>) <i>Halocnemum</i> (<i>Halocnemum strobilaceum</i>) <i>Salicornietum</i> (<i>Salicornia europea</i>)
Semi-desert	300-400	<i>Artemiseto- ephemeretum</i> (<i>Artemisia fragrans</i> , <i>Hordeum leporinum</i> + <i>Poa bulbosa</i>) <i>Artemiseto-Camphorosmetum</i> (<i>Artemisia fragrans</i> + <i>Camphorosma lessingiana</i>) <i>Artemisietum</i> (<i>Artemisia fragrans</i>) <i>Kochieta-Artemisietum</i> (<i>Kochia prostrata</i> + <i>Artemisia fragrans</i>) <i>Botryochloeta-Artemisietum</i> (<i>Botryochloa ischaemum</i> + <i>Artemisia fragrans</i>) <i>Festuceto- Artemisietum</i> (<i>Festuca valesiaca</i> + <i>Artemisia fragrans</i>) <i>Stipeto-Artemisietum</i> (<i>Stipa szowitsiana</i> + <i>S. capillata</i> + <i>Artemisia fragrans</i>) <i>Agropyreto- Artemisietum</i> (<i>Agropyrum cristata</i> + <i>Artemisia fragrans</i>)
Steppe	400-1500	<i>Botryochloetum</i> (<i>Botryochloa ischaemum</i>) <i>Botryochloeta-varioherbosum</i> (<i>Botryochloa ischaemum</i>) <i>Festucetum</i> (<i>Festuca valesiaca</i>) <i>Festuceto-varioherbosum</i> (<i>Festuca valesiaca</i>) <i>Stipetum</i> (<i>Stipa capillata</i> , <i>S. lessingiana</i>) <i>Stipeto- varioherbosum</i> (<i>Stipa capillata</i> + <i>S. lessingiana</i>) <i>Stipeto-Festucetum</i> (<i>Stipa capillata</i> + <i>Festuca valesiaca</i>) <i>Thymeto-Festucetum</i> (<i>Thymus nummularius</i> + <i>Festuca valesiaca</i>) <i>Astragaleto- Festucetum</i> (<i>Astragalus aureus</i> + <i>Festuca valesiaca</i>) <i>Astragaleto-Stipetum</i> (<i>Astragalus pycnophyllus</i> + <i>Stipa lessingiana</i>) <i>Junipereto-Astragaleto-Festucetum</i> (<i>Juniperus oblonga</i> + <i>Astragalus aureus</i> + <i>Festuca valesiaca</i>) <i>Onobrycheto-Festucetum</i> (<i>Onobrychis cornuta</i> + <i>Festuca valesiaca</i>)
Forest	(100-)1000-2200(2300)	<i>Populetum</i> (<i>Populus nigra</i> + <i>P. Alba</i>) <i>Tamarixetum</i> (<i>Tamarix ramosissima</i>) <i>Quercusetum</i> (<i>Quercus macranthera</i> , <i>Q. longipes</i>) <i>Carpinetum</i> (<i>Carpinus caucasicus</i>) <i>Aceretum</i> (<i>Acer iberica</i>) <i>Fagetum-Carpinetum</i> (<i>Fagus orientalis</i> + <i>Carpinus caucasicus</i>) <i>Carpinetum-Fagetum</i> (<i>Carpinus caucasicus</i> + <i>Fagus orientalis</i>) <i>Fagetum</i> (<i>Fagus orientalis</i>) <i>Fageto- Quercetum</i> (<i>Fagus orientalis</i> + <i>Quercus orientalis</i>) <i>Fraxinusetum</i> (<i>Fraxinus excelsior</i>) <i>Parrotiaetum</i> (<i>Parrotia persica</i>) <i>Alnusietum</i> (<i>Alnus</i> sp.) <i>Pinusetum</i> (<i>Pinus eldarica</i>)
Phrygana	1700-2100	<i>Astragalusetum</i> (<i>Astragalus aureus</i> , <i>A. pycnophyllus</i>) <i>Festuceto-Astragalusetum</i> (<i>Festuca valesiaca</i> + <i>Astragalus aureus</i> , <i>A. pycnophyllus</i>) <i>Thymuseto-Astragalusetum</i> (<i>Thymus kotschyanus</i> + <i>T. nummularius</i> + <i>T. collinus</i> + <i>Astragalus aureus</i> , <i>A. pycnophyllus</i>) <i>Acantholimometum</i> (<i>Acantholimon fominii</i> + <i>A. hohenackeriana</i>) <i>Onobrychisetum</i> (<i>Onobrychis cornuta</i>) <i>Thymusetum</i> (<i>Thymus kotschyanus</i> + <i>T. nummularius</i> + <i>T. collinus</i>) <i>Juniperuseto-Astragalusetum</i> (<i>Juniperus oblonga</i> , <i>J. foetissima</i> + <i>Astragalus aureus</i>)
Pseudomaqui	1500-2200	<i>Ilexetum</i> (<i>Ilex hyrcana</i>) <i>Faguseto-Ilexetum</i> (<i>Fagus orientalis</i> + <i>Ilex hyrcana</i>) <i>Quercuseto-Juniperetum</i> (<i>Quercus orientalis</i> + <i>Juniperus foetissima</i>) <i>Juniperusetum</i> (<i>Juniperus oblonga</i>)
Subalpine meadows	2000-2300	<i>Betonicaetum</i> (<i>Betonica grandiflora</i>) <i>Aconisetum</i> (<i>Aconitum</i> sp.) <i>Calthasetum</i> (<i>Caltha polypetala</i>) <i>Veratrietum</i> (<i>Veratrum lobelianum</i>) <i>Alchemillaetum</i> (<i>Alchemilla caucasica</i>) <i>Poaetum</i> (<i>Poa alpina</i>)
High Mountain	2000-2600	<i>Festusetum</i> (<i>Festuca varia</i> , <i>F. ovina</i> , <i>F. rubra</i>) <i>Nardusetum</i> (<i>Nardus stricta</i>) <i>Stipaelum</i> (<i>Stipa lessingiana</i> , <i>S. capillata</i>) <i>Festuceto-Stipaelum</i> (<i>Festuca varia</i> <i>F. ovina</i> <i>Stipa lessingiana</i> , <i>S. capillata</i>) <i>Alchemillaetum</i> (<i>Alchemilla caucasica</i> , <i>A. sericea</i>) <i>Alchemillaeto- Festucaetum</i> (<i>Alchemilla caucasica</i> , <i>A. sericea</i> , <i>A. sericea</i> + <i>Festuca varia</i> <i>F. ovina</i>)
Steppe		<i>Phragmitesetum</i> (<i>Phragmites communis</i>) <i>Arundoetum</i> (<i>Arundo donax</i>) <i>Thyphaetum</i> (<i>Thypha angustifolia</i>) <i>Juncusetum</i> (<i>Juncus littoralis</i>) <i>Bolboschoeanusetum</i> (<i>Bolboschoeanus maritimus</i>) <i>Calamagrostisetum</i> (<i>Calamagrostis gigantea</i>) <i>Carexetum</i> (<i>Carex humilis</i>) <i>Limoniumetum</i> (<i>Limonium meyeri</i>) <i>Glyshirriaetum</i> (<i>Glyshirria</i> Dominant formations and species <i>humilis</i> + <i>Juncus littoralis</i>) <i>Alhagiato-Glyshirriaeto-Tamarixetum</i> (<i>Alhagi pseudohagi</i> + <i>Glyshirria glabra</i> + <i>Tamarix ramosissima</i>)
Water-boggy		

of Talysh which has subtropic climate conditions and is a mountainous region is various. In plans and shore of the Caspian Sea's sandy lands formations with increase of tree species and with domination of species like *Artemisia arenaria*, (*A. sowitsiana*), *Phragmites communis*, *Juncus littoralis*, *Bolboschianus maritimus*, *Thypha angustifolia*, *Carex remota* form various forest formations. In characteristic forest formations of plain regions, *Parrotia persica* *Quercus castaneifolia*, *Carpinus caucasica*, *Zelkova carpiniifolia*, in marshed forest type formation *Alnus barbata*, *Carex remota*, *Cardamine tenera*, *Lucopus europaeus* and in plain forests also *Acer velutinum*, *Ficus carica*, *Punica granatum*, *Buxus sempervirens*, *Ruscus hurcana*, *Crataegus monoguna*, herb plants *Rumex pulcher*, *Sambucus nigra*, *Poa nemoralis*, *Primula heterochroma*, *Viola occulta*, *Solanum persicum*, *Carex contigua*, *Allium erubescens*, *Sedum oppostrifolium*, *Crocus speciosus* and likes are found. Here, *Parrotia persica* species are not found, instead of it *Fagus orientalis*

forms more intense monodominant and polidominant formations of *Fagetum*, *Fageto-Quercusetum* and *Quercuseto-Fagetum*. In these formations, length of *orientalis* is 20-30 m and number of trees is more infrequent in down mountainous forest zones. *Fagus orientalis* forms 32% of Azerbaijan's forest regions (Safarov and Olisayev, 1991). Trunks of bigger trees facing north side are wrapped by *Hedera pastuchovi*. *Ilex hyrcana*, *Danae ramosissima*, *Mespulus germanica*, *Crataegus orientalis*, *Carpinus orientalis*, *C. macrocarpa*, *Sorbus terminalis*, *Prunus divaricata*, *Cydonia oblonga*, *Pyrus boissieri*, *Rosa tomentosa*, *Rubus ibericus* are widespread in subforest layer which forms the second layer here.

Near Siow village, *Taxus baccata* which has length of 1-10 m forms monodominant formation (Taxetum). As well as *Taxus baccatan*, *Lonicera iberica* and *Carpinus schuschaensis* like species are found. This formation has been recorded as characteristic by Grossheym (1926). In high mountainous zone forests;

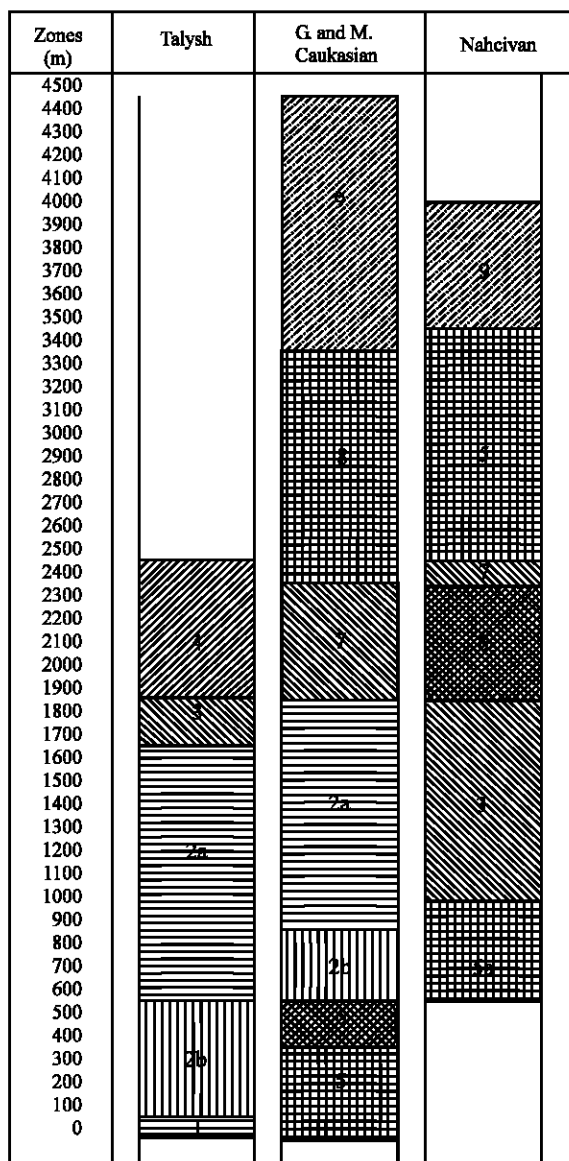


Fig. 2: Distribution of vegetation types of Azerbaijan according to vertical zones

1: Ordirlines forests, 2: Mountainous wide leave forests, 2a: Mixed Hyrcana originated relict forest, 2b: *Quercusetum*, *Quercuseto-Carpinetum*, *Fagetum*, *Fageto-Carpineto-Quercusetum*, 3: Mountain Xeropyte and mountain foot steppe, 4: High mountain wild grass steppe and steppe, 5: Semi desert and desert, 5a: Semi steppe and arid infrequent forest, 6: Phrygana and mountain steppes, 7: Subalpine wild grass steppe, 8: Alpine wild grass, 9: Subnival and naval

Quercus macranthera, *Carpinus orientalis*, *C. macrocarpa*, *C. caucasica*, *Acer laetum*, *A. velutinum*, *A. campestre*, *Quercus castaneifolia*, *Fraxinus excelsior*, *Ilex hyrcana*, *Mespilus germanica*, *Crataegus orientalis*, *C. kyrtostyla*, *C. lagenaria*, *Eonymus latifolius*, *Pyrus hircana*, *Lonicera iberica* and herb trunk plants of; *Poa nemoralis*, *Asperula odorata*, *Dryopteris filix-mass.*, *Dactylis glomerata*, *Poa pratensis*, *Brachypodium silvaticum*, *Campanula ranunculoides*, *Agrostis tenuis*, *Digitalis nervosa*, *Geum urbanum*, *Fragaria vesca*, *Vicia cracea*, *Stachys balansae*, *Carex tomentosa*, *Primula macrocalyx*, *Stellaria media*, *Trifolium pratense*, *Bromus squarrosa*, *Silene ruprechtii*, *Asplenium septentrionale* are found but in north faced side of high mountain zones, *Fagus orientalis* is found only. *Quercus castaneifolia* and *Carpinus caucasica* species are sometimes found and they are very infrequent but *Quercus macranthera* is abundant and found more densely. With respect to middle mountain zone forests, in evergreen shrub layer of high mountain forests, *Ilex hyrcana* is widespread and sometimes it forms shrubs of 10 m² dimension. Where the forests end, shrubs and herbs acquire priority in rockery places. At the height of 1600-1800 m, in south and south-east sides, firigana typed vegetations of *Astragalietum*, *Onobrychisetum* and *Acantholimonetum* formations are found. These formations are shown to be exist (Grossheym, 1948; Yurtsev, 1981) from 3rd period Prilipko (1939, 1954) and Zoharu (1973) shows 16 formations in Nahcivan's firigana vegetation. Most of them are found in mountainous regions of Talysh. Some of them can be shown as *Astragalus aureusetum*, *Acantholimon hohenacerietum*, *Achillea vermicularetum*, *Euphorbia szovitsietum*, *E. marschallianaetum*, *Thymus trautvetterietum*. In high mountainous regions of Talysh, geophytes are rich and *Allium* (18 species), *Ornithogalum*, *Merendera*, *Muscari*, *Gagea*, *Crocus*, *Orchis*, *Colchicum*, *Puschkinia* and species include in genus form seasonal aspect. Altitude from 1400-1600 metres to 2500 (2600) metres from steppe and high mountain steppe of zone vegetation type (Haciyev, 1996). In steppe formations formed by dominance and edification of *Festuca valesiaca*, *Stipa capillata*, *Astragalus aureus*, *A. pycnophyllus*, *Thymus trautvetteri*, *Achillea setacea*, *Artemisia fragrans*, *Koeleria caucasica*, *Carex humilis* and *Phleum phleoides* are added to phytosenoze composition as co-dominant. In north and north sides of 2200-2800 m, as local, monodominant and polydominant formations formed by *Betonacetum*, *Alchemilletum*, *Agrostisetum*, *Rumexetum*, *Cephalariaetum*, *Heraciumetum*, *Trifolietum*, *Poetum*, *Dactylisetum* and high mountain wild grass vegetation are



Fig. 3: Salsoleto-Artemisetum



Fig. 6: Ilex hyrcana



Fig. 4: Lowmountainous forests



Fig. 7: Pseudomaki



Fig. 5: Ilexetum



Fig. 8: Paeonia mlkossowitschi

found. Formation which formed with domination of *Heracleum trachybloma* existed in the beginning of 3rd period (Hacıyev et al., 1979; Prilipko, 1939). According to Hacıyev et al. (1979), *Nelimbium caspicum etum* which belongs to relict asosiation has come from the 3rd period until nowadays (Atamov, 2003). This association is widespread in Talysh's plain marsh fields. Plants like *Potamogeton pectinoides*, *P. lucens*, *Myriophyllum spicatum*, *Trapa hyrcana*, *Ceratophyllum demersum* are

widespread and they form micro groups as spats. In Taliş marsh regions, *Iris pseudocorus*, *Sparganium erectum*, *Schoenoplectus lacustris* and *Heliocharis eupalustris* constitute formations. In Taliş Creek sides, *Pterocarya pterocarpa* and *Abus subcordata* constitute monodominant and polydominant formations in wide areas. *Abus barbata* species is characteristic for marshes forests of Talysh. *Ficus hyrcana* which is an endemic species for down and middle mountainous forests of Taliş

Himilus lupulus, *Smilax exelsa*, *Sambucus ebulus*, *Carex grioletii*, *Cardamine parviflora*, *Poa palustris*, in marshes *Juncus grex* sp. And also various formations (*Juncusetum*, *Ficusetum*, *Sanbucusetum*, *Carexsetum*, *Poaetum*) are found. Especially in *Alnus* formations, plants like *Hedera helix* and *Tamus communis* which are wider are more widespread. In addition to Talysh, in south sides of mountain of Big Caucasian in Azerbaijan, relict hircana trees of *Parrotia persica*, *Quercus castaneifolia*, *Carpinus caucasicus*, *Zelkova carpinifolia*, *Z. hircana*, *Ulmus elliptica*, *Prunus caspica*, *Populus hircana*, are found (Haciyev *et al.*, 1990; Zoharu, 1973). In down level of these forests, evergreen shrub species of *Ruscus hircana*, *Donae rasemosa* are widespread. *Gleditschia caspica* forms formations in side of Talysh's mountain fields and is widespread. In Sea located slopes of this formation, *Albizzia julibrissin*, *Tilia platyphyllos*, *T. prilipkoana* form mixed forest formations.

In higher regions, *Acer velutinum*, *Fagus orientalis*, *Taxus baccata*, *Buxus hircana* are more widespread and form various formations.

In the Talysh's regions; desert, semi-desert, steppe, forest, *phyrigana*, subalpine meadow formations are zonal concentrated, in interzonal vegetation formations like are more characteristic and more concentrated (Atamov and Haciyev, 2001).

Existence of relict formation of Talysh depends on not been exposed to glaciations of this region. *Quercetum* (*Quercus castaneifolia*), *Parrotietum* (*Parrotia persica*), *Facetum* (*Fagus orientalis*), *Ficusetum* (*Ficus hircana*), *Paeoniaetum* (*Paeonia mlokosowitschii*), *Zelkovetum* (*Zelkova carpinifolia*), *Rhamnusetum* (*Rhamnus grandiflora*), *Ilexetum* (*Ilex hircana*), *Donaetum* (*Donae rasemosa*), *Ruscusetum* (*Ruscus hircanus*), *Gleditschietum* (*Gleditschia caspica*), *Trapetum* (*Trapa hircana*), *Buxucetum* (*Buxus hircana*) can be shown as the exist relict formation in Talysh region (Grossheym, 1926; Zoharu, 1973; Safarov and Olisayev, 1991; Atamov and Haciyev, 2001; Atamov, 2003). Fields covered by blockhouse of *Hircanus* which related to protection of these formations must be widened. In this region, in high mountain parts, protection of widespread *phyrigana*

(*Astragaletum*, *Acantholimonetum*, *Onobrychetum*), *pseudomaki* (*Ilexetum*), mountain steppe (*Festucetum*, *Astragaleto-Festucetum*, *Thymeto-Festucetum*), endemic, relict and rare species of wild grass typed vegetations of subalpine zones, their formations and associations must be provided (Fig. 3-8, Table 1).

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