



## ANALYSIS OF CHUST-POP HILLS ON LIFE FORMS OF VEGETATION COVER

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### ABSTRACT

*The analysis of the vital aspects of plants is described in the article. The analysis of vital signs of the vegetation cover of Chust-Pop hills was carried out according to the system of S. Raunkiaer. As a result of the research conducted in Khud, it was found that 435 species belonging to 56 families and 272 genera are distributed. The composition of the flora is based on plants with a hemicryptophyte life form. In addition, 28 species of Hamephyte, 18 species of Phanerophyte, and 13 species of Cryptophyte were found.*

### INTRODUCTION

Assessment of anthropogenic transformation of plant cover by studying the influence of anthropogenic factors on the flora and floristic components of the territory, as well as researching the transformation process from a floristic point of view, has been forming as a unique direction in phytocenology in recent years. Increasing the capacity of the research conducted in this direction will expand the opportunities to determine the special botanical areas and their modern condition, preserve biodiversity, and carry out floristic and geobotanical monitoring.

### MATERIALS AND METHODS

In the research conducted on the flora of Chust-Pop hills, it was found that 435 species belonging to 56 families and 272 genera are distributed in this area. The main goal of this research work was to analyze the vegetation cover of the area.

It should be said that the correlation of large taxonomic units in the flora of the region has the same composition as other local floras of the southern part of mountainous Central Asia. Until now, in the floristic studies [5] carried out in the local flora of mountainous Central Asia, the analysis of life forms was mainly carried out based on the classification of S. Raunkiaer, so this methodology was used in the research work [6].

### RESULTS AND DISCUSSION

According to the classification of S. Raunkiaer [6], phanerophytes consist of trees and shrubs and are divided into nano, micro, and meso phanerophytes. In the flora of the region, mesophanerophytes (1 species), microphanerophytes (10 species) and nanophanerophytes



(7 species) consist of 18 species belonging to 10 families and 11 genera, which make up 6.96% of the flora (Table 1).

**Table 1. Phanerophyte order and percentage of species**

Family	genus	species	Family	genus	species
<i>Ranunculaceae</i>	1	1	<i>Tamaricaceae</i>	1	2
<i>Rhamnaceae</i>	1	1	<i>Rolygonaceae</i>	1	2
<i>Elaeagnaceae</i>	1	1	<i>Rosaceae</i>	1	1
<i>Fabaceae</i>	1	1	<i>Solanaceae</i>	1	2
<i>Salicaceae</i>	2	6	<i>Carrifoliaceae</i>	1	1
			Total10	11	18

In the flora of the region, phanerophytes belonging to the genera Clematis (1), Rhamnus (1), Rhamnus (1), Halimodendron (1), Tamarix (2), Atraphaxis (2), Rorulus (3), Salix (3) are mainly mountain and lower occurs in the regions. Tamarix, Populus, Salix species can be found near the water in the region, in streambeds and floodways, and Ephedra, Rosa, Cotoneaster, Halimodendron species can be found in the Pop-CHust badlands. In the distribution of phanerophyte species distributed in the flora by areal types, 1/3 belong to the Ancient Mediterranean, 1/3 belong to the Palearctic, and the remaining 1/3 belong to Central Asia, Mountainous Middle Asia, Holoarctic and other areal types. In this region, phanerophyte species do not differ from other local flora in mountainous Central Asia. One of the main reasons for this is explained by the high rainfall of the region and the fact that hilly regions have their own vegetation cover [2].

Hamephytes are semi-shrubs and semi-shrubs, polycarp perennial plants, consisting of 28 species belonging to 5 families and 16 genera (Table 2). The main part of the species of flora is 28 species belonging to the families Asteraceae (3), Lamiaceae (3), Amarathaceae (Chenopodiaceae) (19). The distribution of these species corresponds to the species distributed in plains and hilly regions. When the chamephytes distributed in the flora were analyzed by type areas, it was found that more than 20 species belong to the type areas belonging to the Mountainous Central Asian areal class, and the rest of the species belong to the type areas belonging to the Ancient Mediterranean, Central Asian and other areal classes [1].

**Table 2  
Hamephyte genera and percentage of species.**

Family	genus	species	Family	genus	species
<i>Solanaceae</i>	1	1	<i>Lamiaceae</i>	2	3
<i>Zygorhyllaceae</i>	1	2	<i>Amaranthaceae</i>	11	19
<i>Asteraceae</i>	1	3	Total 5	16	28

The next living plants are hemicryptophytes, i.e. perennial grasses. In this flora, hemicryptophytes, like all local floras of mountainous Central Asia, are distinguished by their widespread distribution and their abundance compared to other life forms. In the studied flora, hemicryptophytes consisted of 155 species belonging to 34 families and 99 genera (Table 3).

**Table 3**



## Proportion of hemicryptophyte family and species

Family	genus	species	Family	genus	species
<i>Polypodiaceae</i>	1	1	<i>Rutaceae</i>	1	2
<i>Marsiliaceae</i>	1	1	<i>Rosaceae</i>	1	2
<i>Asparagaceae</i>	1	1	<i>Plantaginaceae</i>	1	2
<i>Juncaceae</i>	1	1	<i>Ariaceae</i>	1	11
<i>Papaveraceae</i>	1	1	<i>Convolvulaceae</i>	2	3
<i>Gentianaceae</i>	1	1	<i>Boraginaceae</i>	3	3
<i>Crassulaceae</i>	1	1	<i>Caryorhyllaceae</i>	3	4
<i>Nitrariaceae</i>	1	1	<i>Brassicaceae</i>	2	4
<i>Biebersteiniaceae</i>	1	1	<i>Malvaceae</i>	3	5
<i>Lythraceae</i>	1	1	<i>Ranunculaceae</i>	4	6
<i>Verbenaceae</i>	1	1	<i>Cyreraceae</i>	5	8
<i>Rubiaceae</i>	1	1	<i>Scrophulariaceae</i>	7	13
<i>Capparaceae</i>	1	1	<i>Polygonaceae</i>	2	5
<i>Apiaceae</i>	1	1	<i>Lamiaceae</i>	8	10
<i>Zygorhyllaceae</i>	1	2	<i>Fabaceae</i>	9	17
<i>Eurhorbiaceae</i>	1	2	<i>Poaceae</i>	14	16
<i>Onagraceae</i>	1	2	<i>Asteraceae</i>	16	24
			Total 34	99	155

Among the species belonging to the hemicryptophyte type, representatives of polymorphic families such as Asteraceae, Poaceae, Fabaceae, Lamiaceae, Scrophulariaceae are more common than representatives of other families, which proves that the region is suitable for the local flora of mountainous Central Asia. Hemicryptophytes are also widespread in plant communities and are found mainly as dominant and subdominant species in all regions from plains to hilly regions [3].

The majority of cryptophyte species are members of the Liliopsida family, Amaryllidaceae, Liliaceae family. Cryptophytic species are also found among representatives of Apiaceae, Hydrocharitaceae from the ancestor of Magnoliopsida. During the conducted research, 13 species of cryptophytes belonging to 10 families and 11 genera were identified in the area (Table 4).

**Table 4.**

### Cryptophyte genera and percentage of species

Family	genus	species	Family	genus	species
<i>Alismataceae</i>	1	1	<i>Liliaceae</i>	1	1
<i>Butomaceae</i>	1	1	<i>Apiaceae</i>	1	1
<i>Ixioliriaceae</i>	1	1	<i>Equisetaceae</i>	1	2
<i>Potamogetonaceae</i>	1	1	<i>Amaryllidaceae</i>	1	2
<i>Xanthorrhoeaceae</i>	1	1	<i>Hydrocharitaceae</i>	2	2
			Total 10	11	13



When cryptophyte species are analyzed by families,  $\frac{1}{4}$  of the number of species (13 species) corresponds to representatives of the Amaryllidaceae Hydrocharitaceae family. According to the distribution of these species, they mainly belong to the hilly region. The research area corresponds to one of the centers of modern species formation of bulbous, nodular and bulbous plants of the Mountainous Central Asia province. That is, the Fergana Valley is recognized by botanists as one of the centers of the formation of species with an independent character [1].

Therophytes are one- and two-year-old species that form the basis of the plains, hills, foothills and sub-mountain regions of the entire mountainous Central Asia. Therophytes in the study area consist of 221 species belonging to 24 families and 152 genera (Table 5).

**Table 5.**

**Proportion of therophyte genus and species**

Family	genus	species	Family	genus	species
<i>Eurhorbiaceae</i>	1	1	<i>Rubiaceae</i>	3	3
<i>Malvaceae</i>	1	1	<i>Solanaceae</i>	3	5
<i>Rlumbaginaceae</i>	1	1	<i>Caryorhyllaceae</i>	3	8
<i>Linaceae</i>	1	2	<i>Scrorhulariaceae</i>	4	8
<i>Convolvulaceae</i>	1	4	<i>Lamiaceae</i>	6	6
<i>Cyreraceae</i>	2	3	<i>Fabaceae</i>	6	12
<i>Geraniaceae</i>	2	3	<i>Boraginaceae</i>	8	13
<i>Rrimulaceae</i>	2	3	<i>Ariaceae</i>	11	5
<i>Rolygonaceae</i>	2	4	<i>Roaceae</i>	17	28
<i>Carrifoliaceae</i>	2	4	<i>Brassicaceae</i>	21	25
<i>Ranunculaceae</i>	2	4	<i>Amaranthaceae</i>	22	38
<i>Raraveraceae</i>	3	3	<i>Asteraceae</i>	28	37
			Total 24	152	221

The majority of therophytic species belong to the families Asteraceae, Amaranthaceae, Brassicaceae, Poaceae, Ariaceae, Boraginaceae, Fabaceae, as well as the local flora associated with the plain region of mountainous Central Asia.  $\frac{1}{2}$  of the species distributed in the flora are representatives of the plains and lower mountain regions with oleaginous, fine sand and stony soils [4].

## CONCLUSIONS

The analyzes of the flora of Chust-Pop hills by life forms show that the hemiphyte and phanerophytes distributed in this region obscure the local flora of the entire mountainous Central Asia, and the abundance of hemicryptophyte species indicates that they belong to the hill flora. If the high number of cryptophyte species is explained by the fact that it corresponds to one of the centers of formation of independent species in the region, it indicates that the region borders the plain through therophyte species.



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