

A COMPREHENSIVE ANALYSIS OF THE FLORA OF CEMETERIES DISTRIBUTED IN THE CITY OF CHIRCHIK

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Abstract

In this article, the taxonomic composition of the flora of Muslim cemetery No. 2 is determined as a result of our field research conducted in 2022-2023. It has been established that the flora of this region consists of 33 families, 96 genera and 149 species. Taxonomic analysis of the grave flora, the number of taxa, families, species in percent. Spectra of polymorphic families and genera of plants, common in the cemeteries of the region, the natural flora of the cemeteries of the city of Chirchik and their significance are given.

Keywords: Flora, taxa, polymorphs, cemetery flora, Muslim cemetery No. 2.

CHIRCHIQ SHAHRI HUDUDIDA TARQALGAN QABRISTONLAR FLORASINING KENG KO'LAMLI TAHLILI

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Annotatsiya. Mazkur maqolada 2022-2023 yillardagi olib borilgan dala tadqiqotlarimizni natijasida 2-sonli Musulmonlar qabristoni florasining taksonomik tarkibi aniqlandi va mazkur hudud florasida 33 oila, 96 turkumga mansub, 149 turdan iborat ekanligi ma'lum bo'ldi. Chirchiq shahar florasining taksonomik tahlili, taksonlar, oila, turkum, turlar soni foizlarda keltirilgan. Hududdagi qabristonlarda tarqalgan o'simliklarni polimorf oila va turkumlarning spektrlari, Chirchiq shahri qabristonlarining tabiiy florasida va ularning ahamiyati haqidagi ma'lumotlar keltirilgan.

Kalit so'zlar: Flora, taksonlar, polimorf, qabriston florasida, 2-sonli Musulmonlar qabristoni.

Аннотация

В данной статье таксономический состав флоры мусульманского кладбища № 2 определен в результате наших полевых исследований, проведенных в 2022-2023 гг. Установлено, что флора этого района состоит из 33 семейств, 96 родов и 149 видов. Таксономический анализ могильной флоры, количество таксонов, семейств, видов в процентах. Приведены спектры полиморфных семейств и родов растений, распространенных на кладбищах региона, природная флора кладбищ города Чирчик и их значение.

Ключевые слова: Флора, таксоны, полиморфа, кладбищенская флора, мусульманское



кладбище № 2.

Introduction

The widespread development of natural ecosystems by humans and the destruction of the ecological environment in the world are leading to a decrease in the diversity of flora objects. In this regard, as a global strategy for the preservation of plant species, it is necessary to develop an effective biodocumentation practice that assesses the state of the flora of a given area. Accordingly, assessing the state of local flora based on modern inventory methods and developing measures to preserve rare and endemic species is of significant scientific and practical importance.

The research work is aimed at determining the taxonomic composition of the flora of cemeteries in the city of Chirchik, compiling a modern synopsis, assessing the distribution of species based on maps, and developing measures to preserve the population of rare, endangered and endemic species. Taxonomic analysis is one of the analyses that shows the main characteristics of the flora. As a result of our field research conducted in 2022-2023, information provided in the existing literature, and analysis of herbarium specimens stored in the National Herbarium of Uzbekistan (NHU), the taxonomic composition of the flora of Muslim Cemetery No. 2 was determined, and it turned out that the flora of this area consists of 149 species belonging to 33 families, 96 orders. The relationship between major taxonomic units does not differ from other local floras in the southern part of mountainous Central Asia [1. 2. 3].

The relationship between major taxonomic units of the studied flora is similar to other floras of the foothills of Central Asia. 1 species belonging to 1 family of Equisetidae (Equisetaceae) is found. The monocots Clade Monocots (Colchicaceae, Liliaceae, Iridaceae, Asphodelaceae, Amaryllidaceae, Juncaceae, Cyperaceae, Poaceae) consists of 29 species belonging to 8 families, 13 orders, and accounts for 19.4% of the total flora.

1.1-table Major taxa, families, number and percentage of genera and species in the flora of Muslim Cemetery No. 2

No	Taxa	Category number	Get up the number	% of Species
SubclassEQUISETIDAE				
Order Equisetales DC. ex Bercht. & J. Presl				
1	Equisetaceae	1	2	0.15
Clade MONOCOTS				
Ordo Liliales Perleb				
2	Colchicaceae	1	1	0.23
3	Liliaceae	2	9	2.57
Ordo Asparagales Link				
4	Iridaceae	2	2	1.01
5	Asphodelaceae	1	1	0.62
6	Amaryllidaceae	1	2	1.56
Ordo Poales Small				
7	Juncaceae	1	1	0.54
8	Cyperaceae	1	3	2.96
9	Poaceae	3	8	9.44
	Total monocots	13	29	20.75%



Clade EUDICOTS				
Ordo Ranunculales Juz. ex Bercht.				
10	Papaveraceae	3	4	1.09
11	Berberidaceae	2	2	0.46
12	Ranunculaceae	7	9	3.51
Ordo Fabales Bromhead				
13	Fabaceae	9	20	8.43
Ordo Rosales Bercht. & J. Presl				
14	Rosaceae	2	4	3.27
15	Moraceae	1	1	0.15
Ordo Malpighiales Juz. ex Bercht. & J. Presl				
16	Salicaceae	1	2	0.39
17	Euphorbiaceae	2	3	1.17
Ordo Malvales Juss. ex Bercht. & J. Presl				
18	Malvaceae	2	3	0.85
Ordo Brassicales Bromhead				
19	Capparaceae	2	2	0.08
20	Brassicaceae	14	18	6.32
Ordo Caryophyllales Juz. ex Bercht. & J. Presl				
21	Polygonaceae	3	4	2.34
22	Caryophyllaceae	8	10	3.82
23	Amaranthaceae	3	10	1.17
24	Portulacaceae	1	1	0.08
Ordo Ericales Bercht. & J. Presl				
25	Primulaceae	1	2	0.31
Ordo Gentianales Juss. ex Bercht. & J. Presl				
26	Rubiaceae	1	1	8.54
27	Gentianaceae	1	1	0.54
Ordo Boraginales Juss. ex Bercht. & J. Presl				
28	Boraginaceae	1	1	3.20
Ordo Solanales Juss. ex Bercht. & J. Presl				
29	Convolvulaceae	1	1	1.01
Ordo Lamiales Bromhead				
30	Plantaginaceae	1	1	1.56
31	Scrophulariaceae	1	1	0.70
Ordo Asterales Link				
32	Asteraceae	11	16	
Ordo Apiales Nakai				
33	Apiaceae	3	3	499
	Total Dicotyledons	81	120	77.93%
Total:		96	149	100%

According to it, the following situation was found in the flora of the cemetery: 11 families with 1 species (33.33%), 7 families with 2 species (21.21%), 7 families with 3 to 4 species (21.21%), 5 families with 5 to 10 species (15.15%), and 3 families with more than 10 species (9%). From the figures presented in Table 1.1., it can be seen that families with 1 to 2 species dominate the flora of the Muslim cemetery No. 2. Also, families with more than 10 species, by the number of species, account for 36.24% of the total flora (54 species). As a result of this analysis, it can be concluded that the main part of the families in the flora of the Muslim cemetery No. 2 consists of families with an average of 1 to 2 species. However, the main part of the flora is accounted for by the leading polymorphic families (families with a large number of species). These include Asteraceae with 16 species, Brassicaceae with 18 species, Fabaceae with 20

species. The main aspects of the flora are also reflected in the sequence of families and orders that occupy the leading positions in terms of the number of species (Table 1.1). In studies conducted in the mountainous part of Central Asia, the Tien Shan and Pamir-Alai ranges and foothills, the sequence of polymorphic families (Asteraceae, Fabaceae, Lamiaceae, Poaceae, etc.) is manifested in almost the same way [4. 5. 6. 7. 8. 9. 10. 11].

In the cemetery flora, the Fabaceae family is the leader in terms of the number of species. The leading features of the family are also characteristic of other floras of the Ancient Mediterranean [12. 13. 14. 15]. As a result of studies of the flora of the region, it was determined that 20 species of the family belonging to 9 genera are found in this flora. The dominance of Fabaceae in the flora is explained by the richness of the genera *Astragalus* (6/4%), *Medicago* (3/2%) and *Cicer* (3/2%).

The next place is occupied by the Brassicaceae family (18 species or 12.08%), mainly due to genera such as *Sisymbrium* L., *Strigosella* Boiss., *Cryptospora* Kar. et Kir. Representatives of this family are mainly widespread in the plains and foothills. As in other local floras in mountainous Central Asia, the diversity of family members in the flora of this region is quite high.

As in all local floras of mountainous Central Asia, the Asteraceae family is also present in the flora of the study area as part of polymorphic families. As a result of research, it was determined that this family consists of 16 (10.73%) species belonging to 11 genera in the cemetery flora. The leading genera of the family are *Cousinia* (3 species, 2.09%), *Centaurea* (3/2.09%), *Taraxacum* (2/1.34%), and others, which are rich in species.

The three leading families in the top three above contain 44 species, which make up 45.83% of the total flora. A similar situation is one of the main features of the flora of the Afghan-Turkestan province [16].

1.2-table Spectrum of polymorphic families and genera

No	Families	Number categories	of Number species	of %	Categories	Number species	of %
1	Fabaceae	9	20	13.42	<i>Astragalus</i>	6	4.02
2	Brassicaceae	14	18	12.1	<i>Gagea</i>	5	3.35
3	Asteraceae	11	16	10.73	<i>Tulip</i>	4	2
4	Caryophyllaceae	8	10	6.7	<i>Poa</i>	4	2.68
5	Ranunculaceae	7	9	6	<i>Chenopodium</i>	4	2.68
6	Liliaceae	2	9	6	<i>Amaranthus</i>	4	2.68
7	Poaceae	3	8	5.3	<i>Poa</i>	4	2.68
8	Chenopodiaceae	3	6	4	<i>Ranunculus</i>	3	2.01
9	Amaranthaceae	1	4	2.6	<i>Medicago</i>	3	2.01
10	Polygonaceae	3	4	2.6	<i>Cousinia</i>	3	2.01
11	Rosaceae	2	4	2.6	<i>Cicero</i>	3	2.01
12	Cyperaceae	1	3	2	<i>Carex</i>	3	2.01
13	Apiaceae	3	3	2	<i>Centaurea</i>	3	2.01
14	Malvaceae	2	3	2	<i>Strigosella</i>	2	1.34
15	Euphorbiaceae	2	3	2	<i>Bromus</i>	2	1.34
Total:		71	120	80.53		53	35.57
	The remaining families (18)	25	29	19.47	The remaining categories (81 items)	43	28.85
		96	149	100%			

In the cemetery flora, the Caryophyllaceae family is ranked fourth in terms of species richness, consisting of 8 families and 10 species (6.7%). In the flora, there are 2 species each in the genera *Arenaria* (2/1.34%), *Cerastium* (2/1.34%). In the remaining 6 genera, one species is found.

In terms of species richness, 15 families with more than 3 species were found in the cemetery flora. These 15 families are considered polymorphic families and account for 80.53% of the total flora.

The cemetery flora consists of 96 families, with an average of 1.5 species per family. The number of families consisting of one species is 61, which accounts for 63.54% of the total families.

Polymorphic genera from other local floras of the Central Asian province were also observed to dominate the flora of the study area. The leading genera included 15 genera with 2 or more species, totaling 53 species (Table 1.2).

The genus *Astragalus* L. is the leading genus in the Central Asian province and Iran, and is also distinguished by its species richness. 6 species of the genus are distributed in the study area, accounting for 4.02% of the total flora.

The genus *Gagea* has special features that deserve special attention, the results of extensive research conducted by the leading scientist I.G. Levichev [11.] ensured that this genus occupies a place among the leading genera in the floras of the Western Tien Shan and Pamir-Alai. In the Flora of Uzbekistan published in 1941, [10.] 26 species of the genus *Gagea* were included, and over time, as a result of extensive research conducted in various regions of Uzbekistan, the number of species has increased significantly (to 83 species) [14; www.botany.uz].

In the Flora of the Muslim Cemetery No. 2, a modern list of the area was formed as a result of research conducted in 2022-2023. One of the distinctive features of the flora is the abundance of genera consisting of one species. Also, this flora is part of the typical moderately rich flora within the Moghul Central Asian province, and the species composition and the sequence of the leading taxa indicate that it belongs to the Western local flora.

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