

Floristic And Systematic Analysis of The Composition of Algoflora Of The Sangzar River

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Abstract

According to the results of the study, 522 species and varieties belonging to 100 genus, 48 families, 24 orders, 14 classes, 7 divisions were discovered in the Sangzar River, of which Cyanophyta - 56, Rhodophyta - 2, Xanthophyta - 7, Chrysophyta - 2, Bacillariophyta - 355, Euglenophyta - 15, 85 - Chlorophyta was discovered for the first time.

Key words: algoflora, genus, families, order, class, department

1. Introduction

To date, algae and their many features of the Sangzar River have not been studied. The algoflora of the Sangzar River, which is the main water basin of the Jizzakh region, has not yet been studied, and there is no information on this issue in the scientific literature [5].

The valley of the Sangzar River is located on the slopes and at the foot of the Turkestan and Malguzar ranges. The border of this region runs in the north and north - east along the crest of the Malguzar ridge, along the south and south - west of the Turkestan ridge, in the west and north - west along the Tuya - Tartar channel. The valley has the shape of an irregular triangle, expanding in a westerly direction. In the east, the Malguzar and Turkestan ranges converge at the Guralash pass. The total area of the study area is about 3000 km².

The Sangzar River is formed from the confluence of two mountain sais - Guralashsay and Baikungursay. The river is 123 km long. The sources of the river lie at an absolute height of 2800 - 3100m [].

In 2009 - 2017 For the first time, we conducted research on the algoflora of the Sangzar River.

According to the results of our study, 522 species and varieties belonging to 100 genus, 48 families, 24 orders, 14 classes, 7 divisions were discovered in the Sangzar rivers, of which Cyanophyta - 56, Rhodophyta - 2, Xanthophyta - 7, Chrysophyta - 2, Bacillariophyta - 355, Euglenophyta - 15, 85 - Chlorophyta (1 - table).

An analysis of the taxonomic composition of the algae of the Sangzar River shows that Bacillariophyta is especially rich and diverse among the departments, in which there are 213 species, 131 variations, 11 forms, or 68.0% of the total number of algae.

The second place is occupied by representatives of the Chlorophyta department - 73 species, 11 variations, 1 form or 16.28%, the third - the Cyanophyta department - 48 species, 8 forms, or 10.72%. Compared to other departments, Euglenophyta includes only 15 species of algae, or 2.87% of their total number, the Xanthophyta department - 7 species, or 1.34%. The departments of Rhodophyta and Chrysophyta include two species each (0.38%).

Table 1: The systematic composition of the algoflora of the Sangzar River

	Class	Order	Family	Chil dbirt	Видов и разновидности	Total	Perc entag e of total
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Algae department					view	variation	the form		
<i>Cyanophyta</i>	2	4	9	17	48	-	8	56	10,72%
<i>Rhodophyta</i>	1	2	2	2	2	-	-	2	0,38%
<i>Xanthophyta</i>	2	3	4	4	7	-	-	7	1,34%
<i>Chrysophyta</i>	1	1	1	2	2	-	-	2	0,38%
<i>Bacillariophyta</i>	2	4	10	37	213	131	11	355	68,0%
<i>Euglenophyta</i>	1	1	2	5	13	2	-	15	2,87%
<i>Chlorophyta</i>	5	9	20	33	73	11	1	85	16,28%
Total: 7	14	24	48	100	358	144	20	522	100%

A taxonomic analysis of the composition of the divisions of the algae of the Sangzar River indicates that 355 species and varieties of diatoms are combined into 37 genera belonging to 10 families, 4 orders, and 2 classes [4] (table - 2).

The Pennatophyceae class unites a total of 331 species and varieties of diatoms or 93.24% of algae, and Centropthyceae - a total of 24 species or 6.76%.

Table 2: The systematic composition of the algae of the Bacillariophyta department found in the Sangzar River

Class	Order	Family	Childbirth	Species and varieties			
				view	variation	Form	Total
<i>Centropthyceae</i>	<i>Discoiales</i>	<i>Coscinodiscaceae</i> Kuetz.	3	14	8	1	23
	<i>Soleniales</i>	<i>Soleniaceae</i> Schutt.	1	1	-	-	1
<i>Pennatophyceae</i>	<i>Araphinales</i> Schutt.	<i>Tabellariaceae</i> Pant.	1	-	1	-	1
		<i>Fragilariaceae</i> (Kuetz.)D.T.	6	23	29	1	53
	<i>Raphinales</i>	<i>Eunotiaceae</i> Kuetz.	2	7	1	-	8
		<i>Achnantheaceae</i> (Kuetz.) Grun.	3	19	10	1	30
		<i>Naviculaceae</i> West.	15	109	66	7	182
		<i>Epithemiaceae</i> Hust.	2	3	-	-	3
		<i>Nitzschiaceae</i> Hass.	2	29	10	-	39
		<i>Surirellaceae</i> (Kuetz.) Grun.	2	8	6	1	15
Total: 2	4	10	37	213	131	11	355

In the Pennatophyceae class, the family Naviculaceae West., Fragilariaceae (Kuetz.) D.T., Nitzschiaceae Hass.

Representatives of Naviculaceae West. Among families, half of all diatoms (51.26%).

The species-rich among genera are considered Navicula Bory. (73), Cymbella Ag. (39), Nitzschia Hass.

(38), the remaining genera count from 1 to 21 species and varieties of algae.

The results of the analysis of the species structure by representatives of the Chlorophyta department showed that 85 species and varieties of algae that we found in the Sangzar River were combined into 33 genera, belonging to 20 families, 9 orders, and 5 classes [1,2,6,7,9,13,15 , 16] (table - 3).

The class Conjugatophyceae includes 47 species and varieties, or 55.29% of the total number in the department; the class of Chlorococcophyceae includes 16 species and varieties (18.82%), and Ulotrichophyceae 15 species and varieties or 17.65% of the total number of algae of the Chlorophyta division.

The remaining classes include a small number of species: in Siphonocladophyceae - 4 (4.7%), Volvocineae - 3 (3.53%).

The largest number of species and varieties in the family Desmidiaceae Ralfs. (22) followed by Spirogyraceae Randh. (18), Ulotrichaceae Kuetz. (9).

Among the genera of green algae, species and varieties of Spirogyra Link are rich. (18) Cosmarium Corda. (17), Ulothrix Kuetz. (7).

Based on the structure of representatives of the Cyanophyta department, it can be noted that the 56 species and forms found belong to 17 genera, 9 families, 4 orders, and 2 classes [10, 11, 12] (table - 4).

The class Chroococcophyceae includes 35 species and varieties, or 62.5% of the total number (56).

The largest number of species and varieties includes the family Oscillatoriaceae (Kirchn.) Elenk. - 13. They are followed by Gloeocapsaceae Elenk. et Hollerb. (11 species), Coccobactraceae Elenk. (9 species), Microcystidaceae Elenk. (7 types). Among genera, Gloeocapsa (Kuetz.) Hollerb has the largest number of species and varieties. (10) then Merismopedia (Meyen) Elenk. (6), Anabaena Bory. (5), Phormidium Kuetz. (5).

Table – 3: The systematic composition of the algae of the Chlorophyta department identified in the Sangzar River

Class	Order	Family	Childbirth	Species and varieties			
				view	variation	form	Total
<i>Volvocineae</i>	<i>Chlamydomonadales</i>	<i>Chlamydomonadaceae</i> Pasch.	1	2	-	-	2
	<i>Volvocales</i>	<i>Volvocaceae</i>	1	1	-	-	1
<i>Chlorococcophyceae</i> (<i>Protococcophyceae</i>)	<i>Tetrasporales</i>	<i>Tetrasporaceae</i> Lemm.	1	-	1	-	1
	<i>Chlorococcales</i>	<i>Chlorococcaceae</i> Black. et Transley.	1	1	-	-	1
		<i>Hydrodictyaceae</i> S.F.Graydumortier. orth. mut. Cohn.	1	1	-	-	1
		<i>Micractiniaceae</i> (Brun th.) G.M. Smith.	2	2	-	-	2
		<i>Dictyosphaeriaceae</i> (Detoni) G.S. West.	1	-	1	-	1

		<i>Oocystaceae</i> Bohlin.	2	3	-	-	3
		<i>Scenedesmaceae</i> Oltmans.	2	4	2	-	6
		<i>Ankistrodesmaceae</i> Korsch.	1	1	-	-	1
<i>Ulotrichophyceae</i>	<i>Ulotrichales</i> Bohlin.	<i>Ulotrichaceae</i> Kuetz.	3	7	2	-	9
		<i>Ulvaceae</i> Lamour.	1	1	-	-	1
		<i>Chaetophoraceae</i> (Harv.)De-Toni.et Levi.	3	3	-	-	3
	<i>Microsporales</i>	<i>Microsporaceae</i> Thur.	1	2	-	-	2
<i>Siphonocladophyceae</i>	<i>Cladophorales</i> Fritsch.	<i>Cladophoraceae</i> (Hass.) Cohn.	2	4	-	-	4
<i>Conjugatophyceae</i>	<i>Zygnematales</i>	<i>Mougeotiaceae</i> Randh.	1	3	-	-	3
		<i>Zygnemataceae</i> Rangh.	1	3	-	-	3
		<i>Spirogyraceae</i> Randh.	1	18	-	-	18
	<i>Desmidiiales</i>	<i>Closteriaceae</i>	1	-	1	-	1
		<i>Desmidiaceae</i> Ralfs.	6	17	4	1	22
Total: 5	9	20	33	73	11	1	85

The Euglenophyta Department includes 15 species and varieties of algae belonging to 5 genera (*Trachelomonas* Ehr., *Strombomonas* Defl., *Euglena* Ehr., *Astasia* Ehr. Emend. Duj., *Gyropaigne* Skuja.), 2 family (*Euglenaceae* Klebs. *Klebsae.* *Astasia.*), 1st order (*Euglenales*), 1st class (*Euglenophyceae*) [14].

Species and varieties of *Trachelomonas* Ehr are rich among the genera of euglenae algae. (10).

Xanthophyta has only 7 species of algae belonging to 4 genera (*Characidiopsis* Pasch., *Heterothrix* Pasch., *Tribonema* Derb. Et Sol., *Heterococcus* Chod.), 4 family (*Characidiopsidaceae* Ettl., *Heterotrichaceae*, *Tribonematelesaceae* , *Tribonematales*, *Heterocloniales*) and 2 (*Heterocapsophyceae*, *Heterotrichophyceae*) class [3].

Table – 4: The systematic composition of the algae of the Cyanophyta department identified in the Sangzar River

Class	Order	Family	Childbirth	Species and varieties			
				view	variation	the form	Total
<i>Chroococco phyceae</i>	<i>Chroococcales</i> Geitler	<i>Cocobactreaceae</i> Elenk.	3	9	-	-	9
		<i>Holopediaceae</i> Elenk.	1	1	-	-	1
		<i>Merismopediaceae</i> Elenk.	1	4	-	2	6
		<i>Microcystidaceae</i> Elenk.	3	5	-	2	7
		<i>Gloeocapsaceae</i> Elenk.et Hollerb.	2	9	-	2	11
	<i>Tubiellales</i> Elenk.	<i>Cyanothrichaceae</i> Elenk. (Apud. Kisselev)	1	-	-	1	1
<i>Hormogoni ophyceae</i>	<i>Nostocales</i> (Geitl.) Elenk.	<i>Nostocaceae</i> Kuetz.em.(Kirchner) em.Elenk.	1	3	-	-	3
		<i>Anabaenaceae</i> Elenk.	1	4	-	1	5

	<i>Oscillatoriales</i> Elenk.	<i>Oscillatoriaceae</i> (Kirchn.) Elenk.	4	13	-	-	13
Total: 2	4	9	17	48	-	8	56

Two species are represented by Chrusophyta (*Chromulina rosanoffii* Butschli., *Chrysococcus cordiformis* Naum.) And Rhodophyta (*Antithamnion boreale* (Gobi.) Kjellm., *Batrochjspermum densum* Sir.) [7,8].

Thus, it must be emphasized that 522 species and varieties were discovered in the Sangzar River. Of these, Cyanophyta - 56, Rhodophyta - 2, Xanthophyta - 7, Chrusophyta - 2, Bacillariophyta - 355, Euglenophyta - 15, 85 - Chlorophyta was discovered for the first time.

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