REPRESENTATIVES OF *CLADOCERA* ORDER IN THE LAKES OF THE REPUBLIC OF KARAKALPAKISTAN

Turemuratova G.I[1].,Madumarov M.Dj[2]., Kuzmetov A.R[3]., Zaripov E.Z[4].

[1] Karakalpak State University named after Berdak, doctoral student

[2]Uzbek National University named after Mirzo Ulugbek, doctoral student

[3] Astrakhan state technical University branch in Tashkent region, Professor, D.Sc.

[4] Astrakhan state technical University branch in Tashkent region, Associate professor, PhD

Annotation: In the article is given the information about the existence of lakes of various sizes and ecological conditions in the Republic of Karakalpakistan, in the following of them: Dovud kul, Aqchakul, Qorateren, Saykul 9 representatives of crustaceous of *Cladocera* order inhabit. Crustaceous of *Daphnia galeata* were defined by molecular genetic method and it was proved that they are the new species for the region.

Key words: ecosystem, water basin, hydro biological, bio productivity, zooplankton, oxygen, genomic, mitochondrial.

Introduction

Currently, research is being conducted to study the biological diversity of aquatic ecosystems around the world. In this regard, one of the important tasks is the faunistic analysis of aquatic organisms in the region at a time when the influence of modern anthropogenic factors is increasing and ecosystems in natural waters are changing. As a result of changes in the rivers of the Amu Darya basin, the water level in the lakes has decreased. One of the groups of organisms in the aquatic ecosystem ***Cladocera*** assessment of the current state of the deputies, analysis of the faunal composition, study of economic significance, substantiation of scientific conclusions and implementation has both scientific and practical significance.

Literature review

In the middle of the 19th century, Russian researchers A.Lemon (1814-42), F. Baziner (1842), A. I. Butakov (1848-49) started to study the watersheds of Uzbekistan. Preliminary research has been linked to fishing in the Aral Sea. In the early 1920s, when studying the fauna of the Aral Sea, S. A. Zernov, L. S. Berg's research in ichthyology and hydrobiology is particularly noteworthy. The establishment of the Central Asian State University and the Aral Sea Fishing Station in 1920 led to the development of ichthyological and hydrobiological research. G.V. Nikolsky (1933) identified 59 species of zooplankton organisms in Lake Karateren. Among them are phytophilous complex crustaceans: Sida cristalinana, Pleuroxus laevis, Simosephalis vetulus, Acroperus harpae, as well as pelankton complex: Diaphanosoma brachiurum, Moina dubia species. In the middle and second half of the last century, academician A.M. Mukhamediev is associated with the name S. Aynazarov, A.M. Mukhamediev (1974) In his research on Lake David, among the crustaceans with horned whiskers: *Sida cristalinana, Daphnia longispina, Simosephalis vetulus, Moinaq micrura, Bosmina lonirostris, Pleuroxus laevis, Acroperus harpae, Alona harpae*.

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Materials and research methods

The Republic of Karakalpakstan has lakes of different sizes and different ecological conditions, some of which have a very high salinity level, and there are no traces of life at all. Our research will give us an idea of the overall bioavailability of aquatic organisms in these lakes by studying horned crustaceans (Cladocera). The horned mustache was obtained by filtering 50-100 liters of water in the open parts of the basin, in the middle and near the shore, ie through the Jedi net, which draws zooplankton organisms from the littoral zones. The distribution of these organisms in a body of water depends mainly on the temperature of the water, the light, the amount of oxygen in the water, the presence of carbon dioxide and other substances. Some species of these organisms have an oxygen content of 0, less than 2 ml/l is also viable. As algae grow, so do crustaceans. The absence of these organisms in water bodies leads to changes in the food chain.

Hydrobiological samples were collected from various points of Akcha Lake, Korateren, Davut Lake and Saikul Lake in the Republic of Karakalpakstan.

The tours used identifiers E.F.Manuylova, A.M.Mukhamediev, N.M.Korovchinsky, J.Benzie. In addition, molecular genetic methods were used [1,2,3,5]. Genomic DNA purification was performed using the TermoScientific GeneJet (Termofisher com) DNA isolation protocol, a PCR-amplification method used to study the nucleotide sequence of the 12S region of mitochondrial DNA by syntactic fringe. ABI PRISM® BigDye ™ Terminator v. For DNA sequencing. 3.1 was performed using a set of reagents, and the reaction products were recorded in an automatic sequencer SeqStudio Genetic Analyzer (Appliedbiosystems) [6].

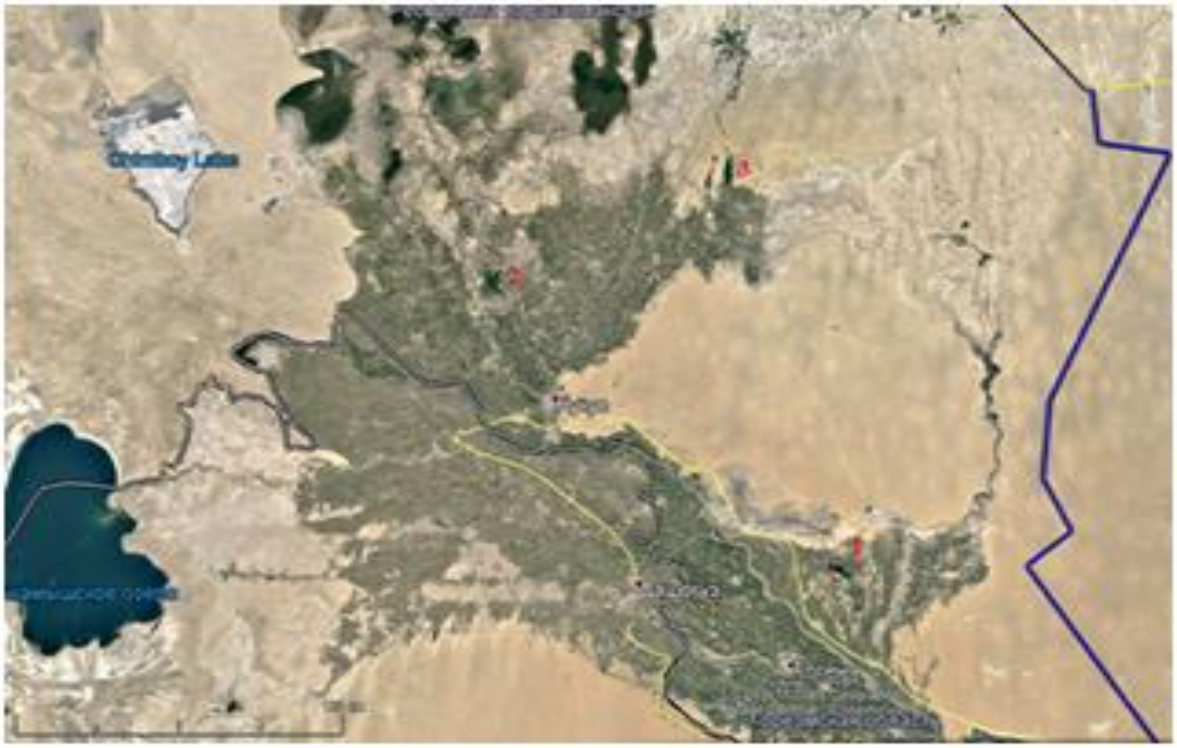

Figure-1. Sample lakes:1-Davut lake, 2-Akchakul, 3-Korateren.

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Results obtained

In the samples taken from Lake Korateren in the spring during the study *Daphnia longispina*, *Ceriodaphnia dubia*, *Moina macrocopa*the crustaceans dominated. 7 species of crustaceans have been recorded in Lake Saikul (table).

Table

Cladocera representatives of the tribe

Lakes / **Taxa**	Money Lake	Black Lake	Lake David	Saikul
Daphnia longispina		+		
D. galeata	+			
D. *similis*			+	+
Simocephalus exspinosus				+
Simocephalus serrulatus				+
Ceriodaphnia cornuta				+
Ceriodaphnia cf reticulata				+
Ceriodaphnia dubia		+		
Moina macrocopa	+	+	+	+

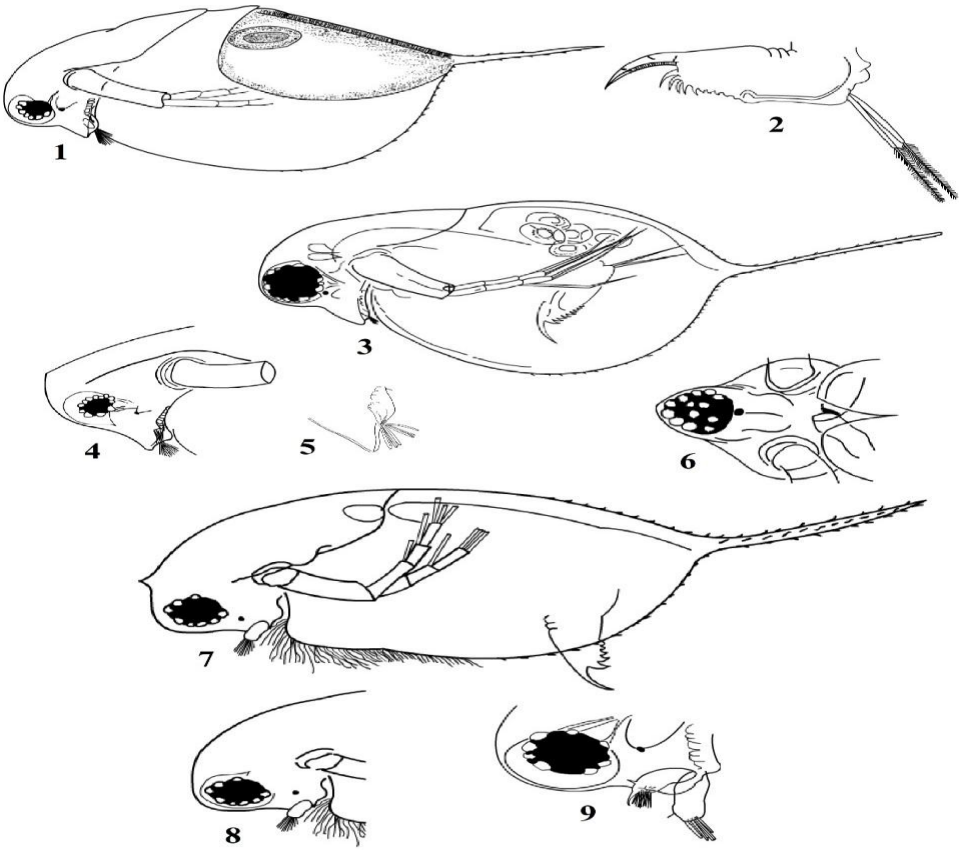

Figure-2. Daphnia galeata **structure (original. Author: Madumarov).**

1-epippial female, 2-postabdomen, 3-patenogenetic female, 4-head part, 5-rostrumi, anterior view of the head, 7-general structure of the male, 8-head part, 9-I antenna.

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***Daphnia galeata* structure.** The body has an ovoid structure. The eyes are small and have spots. The body undergoes changes, sometimes the scalp is developed. However, the tip of D. cucullata singari is not sharpened. The lower front edge of the head is straight.

This species is widespread in Central Asian watersheds. Daphnia galeata in Ahangaran, Charvak, Tuyabuguz, Andijan, Karkidon, Akdarya, Talimarjan, Tudakul, Arnasay reservoirs. It is in the development stage from March to November. From May to September, Charvak is the dominant reservoir. The increase was also observed in the winter months, when the water temperature was 22-26 ° C and there were 12 to 28 eggs in the egg sac. [4]

In addition, among the representatives of Cladocera: Simocephalus exspinosus 1841, Simocephalus serrulatus 1941 (Lake Amu Darya), Ceriodaphnia cornuta Sars, 1885, Ceriodaphnia cf reticulata, 1820 Lake Lake, Terio Lake (189 Amu Darya).. Moina macrocopa is predominant in almost all lakes.

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