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THE BASICS OF AZERBAIJAN ECOLOGICAL HAZARD POSSIBLE CAUSES OF KURA RİVER

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Caucasus territories with less water - which is located in the area of south - east 60% of the water are balancing river water is flowing outside and 64% of this applies to the Kura - Aras basin. At the same time it is known that each 2 rivers belong to five states (Turkey, Iran, Armenia, Georgia and Azerbaijan) which are always continuously exposed to anthropogenic impacts. In the last 60 years (since 1956) the complex character monitoring has shown that the upper part of the every 2 river (mainly Turkey), the mountainous terrain are not polluted by the population and industry and self-purification processes realized neutralization the waste of local alloxtons. Both rivers which are flowing through the territory of neighboring states (Aras to Armenia, Kura to Georgia) are stable condition on ecological and saprophyte side.

Keywords: *sanitary-hydrobiology, duct - enterobakter, mezotrof, oliqosaprob, destruction, alloxton*

Introduction

It is known that, 64% of Azerbaijan's water balance, which is located in the drought-stricken area in the south-east of the Caucasus, is the waters of the Kura river flowing outside. At the same time, it is also known that the Kura river basin is always subject to anthropogenic influences because it is related to the land of five states (Turkey, Iran, Armenia, Georgia and Azerbaijan). A complicated character with a monitoring focus over the last 60 years (from 1956) has been understood from planned researches, as the upper part of the Kura river (especially in Turkey) is mountainous terrain, which is sharp and constantly contested by the population and industrial areas. At the same time, it has been found that local pollution from the short-to-small field of river is neutralized through self-cleaning processes, and the Kura river is in an environmentally stable state in the neighboring state (Georgia).

Materials and methods used in research

First of all, it is important to note that for the first time, the Kura River, considered as an important water source of Azerbaijan,

And its countless branches have been researched and are now is being continued in Turkey, Georgia and Azerbaijan throughout the basin of water reservoirs from microbial, sanitary-hydrobiology, hydrochemical, environmental, trophology and toxicological aspects from 1956 until years. Water samples for microbiological, hydrochemical and hydrobiological analyzes were collected from 34 stations (21 in Turkey and 13 in Georgia) from Y.İ. Sorokin's [12] and J. Knudse's [3] devices – in the spirit of the Kura river channel. Microbiological investigations have been carried out in accordance with the methodological recommendations of A.S. Razumov's [7], V.I.Romanenko, S.I.Kuznetsov [8] and A.G.Rodinan [9], and hydrochemical analyzes by O.A.Alekin [3] were carried out through the photometric device of Polintest.

The results and discussion

In terms of space and time, it has been understood from many years, chapters and researches that the Kura river and its main branches are severely polluted in the territories of Georgia and Armenia [1; 5; 10; 11th; 13]. It is also known that both rivers are not accepted as drinking water sources for the population in these countries and are used as waste water without any preventive measures.

For the first time we find it appropriate to debate the results obtained in order to explicitly

imagine the ecological, sanitary-hydrobiology, saprobity conditions of the Kura river of Turkey in the area-land from the fountain-sources of the Allahu Akber mountain range to the Caspian sea.

The ecological condition of the Kura river has been researched in detail in all three parts of it - up (from the first fountain to the borjom), middle (Until clause of Mingachevir) and Low Kura (from the Caspian sea) and the indicator of the saprob ratio of 1500 km. The number of general microbiotics are fully understood according to the quantitative-quality criteria of saprophytes and coliform bacteria, the Upper Kura ecosystem is stable.

It is clear from Table 1 that the total number of microspheres in the Upper Kura during the year is 0.9-2.8 million / ml and the amount of saprophytic bacteria is 0.2-2.3 thousand / ml. These figures are considered to be the smallest indicators when compared to the large number of evidence-findings that have been obtained throughout the Kura basin. It is noted that the number of microbes and saprophytic bacteria in the Upper Kura water of the Ardahan and Gole cities, which is 200 km away from Turkey, is 3-3.5 times higher than the indicators in the neighboring areas. This is related to that, Kura river is contaminated with waste water drained from the same hoods. At the same time, this type of local pollution has been understood from specific researches we conducted to determine the extent of the spread, after 10 to 18 km from the waste site, the waters are restored according to the indicators in the previous hints (Table 1).

According to the data presented in Table 1, the alloxton organic substances that enrich the river with the Upper Sphere effluent are being degraded through self-cleaning processes and the stability of the ecosystem is hiding. It should be noted that since the water content of mountain rivers, especially rivers in the source regions, is low, the disposal of marginal substances in these areas is unlikely to be useful in biochemical processes. According to it, if the Upper Sphere is over-wastewater, marbles are likely to come into contact with the ecosystem in terms of sanitary-hydrobiology. However, according to the results of observations we have made 2-3 times over the past 10 years, we have to admit, according to the comparison of the yields of Middle-run Georgia and saprophytic bacteria (Table 1), the Upper Kura in Turkey is almost clean in terms of environment, health-hydrobiology.

Table 1

Annual average amount of saprophytic bacteria in the Central Kura water in Georgia (thousand / ml)

Precincts	1964	1974	1979	1984	1991	1994	1998
Akhalkalaki	0.4	1.5	4.6	9.6	24	71	83
Aspinza	0.6	1.2	3.8	8.3	16	80	91
Borjomi	0.7	15	52	86	124	170	210
Akhaldaba	1.3	23	66	110	210	210	310
Gori	23	86	110	210	210	300	360
Mtsxeti	110	210	240	296	291	360	410
Tbilisi	220	390	360	295	205	240	360
Soganlik	300	330	270	280	260	280	400
Rustavi	400	340	210	330	300	310	380
Khramchay	100	140	290	280	330	340	400
Shikhli	290	360	260	320	300	294	380
Poylu	110	220	240	190	210	280	296
Kirzan	93	130	170	166	188	210	240

According to the table presented in Table 1, the cities of Akhalkalaki-Akhaldaba, which bordered Turkey almost at the beginning of the Middle Kura, were in the area, until 1974, the water was ecologically mesosaprobic. In the last years, it has been mentioned that the city of Gori has a sharp pollution. [10] Interestingly enough, the amount of saprophytic bacteria in the area of the Middle Crawl Mtsxeti 50 years ago has been much more than 100 times, on average, from the indicators found within the borders of the Republic of Turkey. It is also clear from the table that in the last century, until the 60's - as in the case of the Middle Kura borjom, which is fully compatible with the mezosaprobe demonstrator, As you can see, in the last 50 years in Georgia, Middle Kura, which has an equal flow to 400 km, has lost its ability to clean itself. To imagine the dangers of pollution in Georgia, our Georgian colleagues G.Supatashvili, L.Tsiskarashvili [13] and b. celebrate that the 1.8-2.2 km^3 wastewater that has not been cleaned annually from Georgia through the Kura river basin is drained. According to A. Ouen, the volume of Kura water drained for waste to be harmless in this volume should be more than 18-23 times dirty water [6]. This accountant, the volume of clean water from the stream of Kura river (6-7 km^3) belonging to the cities of Tbilisi, Mtsxeti and Rustavi does not know the polydutants which are squeezed into the Middle Sphere, and goes to Azerbaijani territory in a dangerous situation. It is by no means a coincidence that they are not favored in Kura water from Georgia in Georgia, and they rightly consider it dangerous.

It should be noted that one of the basic, consistent indicators for the determination of the sanitary-hydrobiological status, saproby, of open waters, in particular rivers, is the chemistry of bacteria belonging to the coli-entero group in the water. Because bacteria belonging to the same group are directly related to faecal pollution of waters. The settlement in Upper Kura is very small and most villages consist of 15-18-20 houses. For example, 23 thousand people live in the Arazian city of Ardahan, which is a big history, and the main industrial-agricultural areas are livestock. According to him, it is predictable that the main source of pollution with the bacteria belonging to the Upper Kura parole-enterogroup may be related to the natural wastes of agricultural animals. Studies have shown that in the summer, the amount of coliform bacteria in the Kura water varies between 20-170 / ml. Interestingly, after Ardahan, the number of colibacterians, which were 170 / ml in water, was equal to 20 / ml in the area of Eminbey town neighboring to Georgia. Medium In order to imagine the degree of pollution in Georgia more clearly, indicators known from 1964 to 1994 are given in Table 2.

Table 2

Number of Central Kura River Saprophytes and Coliform Enterococci Bacteria (thousand / ml) in Georgia for many years (summer)

	Saprofit bacteria						Koli-enterobacteria		
Precincts	**1964**	**1974**	**1979**	**1984**	**1991**	**1998**	**1979**	**1989**	**1998**
Borjomi	0.4	15	52	86	124	176	0.13	2.3	3.7
Gori	48	78	112	210	236	187	0.9	3.2	3.8
Mtsxeti	270	210	300	296	311	284	8.2	19.0	24.0
Tbilisi	405	390	280	300	303	298	10.0	18.0	22.0
Rustavi	400	330	260	286	227	266	8.6	30.0	26.0
Khramchay	300	290	296	330	270	310	13.0	23.0	31.0
Shikhli	300	360	290	320	300	294	18.0	19.0	26.0
Growth, times	**750.0**	**24.0**	**5.6**	**4.0**	**2.5**	**1.6**	**138.0**	**8.0**	**7.0**

The table clearly shows that the Middle Clow was relatively clean in Georgia, like the city of Gori from Borjomi, and the sharp pollution in these areas occurred in the 60s of the last century. In the same period, the number of saprophytes counted as saproblue indicator in some Kura water increased 750 times and the number of coliform bacteria increased to 138, while bordered by Azerbaijan from Borjomi city.

In the upper Kura saprophytes and cholesterol are the smallest of the 174 and 176 times, respectively, of the same indicators in the middle row, providing a well-informed idea of the pollution rate of the waters from both fields (only organic matter).

It should be noted that there is sufficient evidence that poisoning of Kura river with sharp contamination in Georgia, chemical compounds, heavy metal salts, pesticides, petroleum-based compounds, phenols and other pollyutants. We touched on the demands of the environmental microbiologist for the modern ecological condition of the Kura river, a species, periodic magazines different from those of the illicit-epidemiological researches, which are less illuminated, without touching them. According to the results of our microbiological studies Upper and Middle Kura, the comparative results for the further induction of the condition of the Kura river outside the country territories are shown.

As you can see, the ecosystem stability is recorded on the territory of Turkey like the border water of Kura water with Georgia and polisaprob is polluted at the neighboring state. It has been understood from a number of researches that the general conditions of rivers are favorable conditions for the formation of diseases due to pollution of organic matter (waste) in waters. S.M.Drachev and oth. [4] proved that home-program farming with richly assimilated alloxton organic matter is rich in pathogenic microbes, parasites, viruses, fungi and b. the primitive nature of the mass develops, they hold virulentities for a long time. It should be noted that, according to a mutual official agreement in 1976, during the discussions with the Central Kura Georgia EA, the Director of the Institute of Zoology, Acad. B. Y. Gurashvili confessed that his employees in Kura water were discovered 18 microbiological-parasitic diseases [13].

The determination of the pollution of the organic matter of the edges of the river is also believed to be indicative of oxygen intoxication. The results obtained in 1964-1989 in Central Kura river are presented in Table 3.

As we can see, the amount of oxygen consumed in the biodestroy of the easily acidified organic substances of alloxton and human origin increased by 7-9 times in the 34-day-old Kura water. It can be shown for comparison that in the summer of 2006, the maximum amount of oxygen content in the Upper Turkey soil was not more than 0.4 mg O_2 / l.

Table 3

Middle Run in Sagittarius Georgia
The biological cost of oxygen in the field - o 2 mg/l

Precincts	1964	1974	1984	1989	1998	Growth, times
Dviri	0.1	0.4	0.74	0.93	0.96	9.0
Borjom	0.3	0.6	0.87	1.3	2.4	8.0
Khashuri	0.6	0.8	1.8	2.0	3.8	6.3
Gori	1.2	1.3	2.9	3.3	3.8	3.0
Tbilisi	1.9	2.3	2.7	2.9	5.2	3.0
Rustavi	2.0	2.4	2.8	2.9	4.9	2.5
Shixli (border)	2.6	2.9	4.76	3.8	4.3	1.7

Conclusion

It has been understood from the results of the microbiological studies that the Kura river has reached to the beginning in a planned way for the last 50 years in all the ages and chapters, the Upper Kura river in Turkey is stable in terms of environment, health and hydrobiology. In the settlement areas such as Gole and Ardahan, local, short-range pollution of waters passes by livestock associations in the summer and the previous environmental steady state of the water is restored through self-cleaning processes at 12-18 km. The continuous pollution of the Kura river has been continuing for 400 km in the territory of Georgia, and it becomes sharp in terms of space-time. Pollutants of the main alloxton character, anthropogenic origin, polluted at the polisaprob, can not neutralize the self-cleaning process polydutants, which are regarded as natural resistance in the Kura water. Organic pollution has created optimal conditions for the development of pathogenic microbiota and parasitic diseases in the water.

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AZƏRBAYCANIN ƏSAS TRANSSƏRHƏD AXARI OLAN KÜR ÇAYININ EKOLOJİ TƏHLÜKƏ EHTİMALINI ARTIRAN SƏBƏBLƏR

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Qafqazın cənub-şərqində, quraqlıq sayılan ərazidə yerləşən Azərbaycanın su balansının 60%-dən çox hissəsini təşkil edən və əsas transsərhəd axar olan Kür çayının hövzəsi 5 dövlətin (Türkiyə, Gürcüstan, Ermənistan, İran İR və Azərbaycan) ərazisindən keçir. Ona görə uzun illərdən bəri Kür çayı və onun çoxsaylı qolları aramsız olaraq antropogen təsirlərə məruz vəziyyətdədir. Son 60 ildə (1956-cı ildən) aparılan monitorinq yönümlü tədqiqatlardan məlum olmuşdur ki, Kürün yuxarı hissəsi (Türkiyə ərazisində) dağlıq olduğuna görə, ekoloji baxımdan sabit vəziyyətdədir. Eyni zamanda müəyyən olunmuşdur ki, Kür çayı Gürcüstan ərazisində kəskin dərəcədə çirklənir.

Açar sözlər: *sanitar-hidrobiologiya, koli-enterobakter, mezotrof, oliqosaprob, destruksiya, alloxton*

ПРИЧИНЫ УВЕЛИЧЕНИЯ РИСКА ЭКОЛОГИЧЕСКОЙ ОПАСНОСТИ Р. КУРЫ – ГЛАВНОГО ТРАНСГРАНИЧНОГО ИСТОЧНИКА ВОДЫ В АЗЕРБАЙДЖАНЕ

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В расположенном в юго-восточной, аридной зоне Закавказья – Азербайджане более 60% водного баланса составляет приток р. Куры. Будучи трансграничной рекой, водосборная площадь ее связана с территориями 5 государств (Турция, Грузия, Армения, Иранская ИР и Азербайджан), которая изначально подвергается антропогенным воздействиям. Она исследуется нами с 1956 года до сих пор. Установлено, что экосистема верхнего участка р. Куры на территории Турции экологически стабильна, а первоначально, до стадии полисапробности, она загрязняется на территории Грузии.

Ключевые слова: *санитарная гидробиология, мезотроф, олиготроф, деструкция, аллохтон, коли-энтеробактер*