

# Coverage of public health and environmental problems in Bukhara in the periodical press

*Mahmud Orziyev*<sup>1,2\*</sup>, *Jamshid Kucharov*<sup>3</sup>, and *Faxriddin Egamberdiyev*<sup>3</sup>

<sup>1</sup> Bukhara State University, Bukhara City 200100, Bukhara, Uzbekistan

<sup>2</sup> Bukhara State Pedagogical Institute, Bukhara City 200100, Uzbekistan

<sup>3</sup> Karshi State University, Karshi, Uzbekistan

**Abstract.** In the following article the aggravation of the environmental situation in the city of Bukhara, as well as the lack of knowledge about modern medicine in Bukhara, the obsolescence of concepts in the field of urban planning, in particular as a result of the fact that at the beginning of the 20<sup>th</sup> century the Zarafshan river brought less and less water to Bukhara due to the fact that diseases caused by the severity of the hygienic condition of the streets of the city of Bukhara and feedback on their prevention, treatment are reflected in the periodic press issues have been analyzed.

## 1 Introduction

At the beginning of the 20th century, on the initiative of progressive intellectuals in Bukhara, the early periodical press outlets “Bukhoroi sharif” and “Turon” were circulated. These periodical press pages are a valuable resource on the history of Bukhara of the time, and on the press pages it can be seen that many articles and messages about the ecological and hygienic state of Bukhara city have been published. In particular, it can be seen that the lack of drinking water in Bukhara, the consumption of dirty water, the origin of various infectious diseases, the dumping of garbage on the streets by residents, even the running dirty water of the baths, the contagious diseases mostly occurred in the populations of Bukhara, advanced feedback for their time aimed at preventing them, was caused by the Bukhara Periodical Press.

## 2 Materials and methods

In the content coverage of the topic, the materials of the newspapers “Bukhoroi sharif”, published from June 11, 1912, “Turon”, which saw the face of the publication from March 11, 1912, were taken as a basis. Both of these media outlets ceased publication on 2 January 1913. These press outlets are an important source of information from the history of the emirate of Bukhara, in particular the city of Bukhara, dating back to the beginning of the 20<sup>th</sup> century. Methods such as comparative analysis, principles of chronological consistency,

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\* Corresponding author: [m.z.orziyev@buxdu.uz](mailto:m.z.orziyev@buxdu.uz)

objectivity, historicism, systematic approach have also been used from a methodological point of view.

### 3 Results and discussion

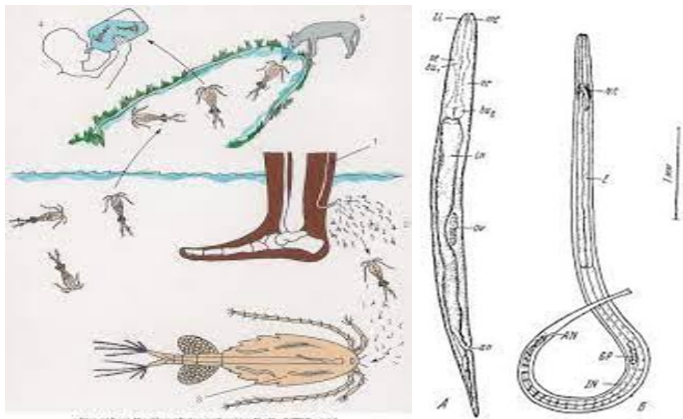
The Bukhara Oasis is located in the middle of the desert, and the Oasis is surrounded by deserts from the North and South. As a result of the irrigation by the waters of the narrow Zarafshan River between the Karakir to the North and the ridges of Karaulbazar to the south, and the Zarafshan waters, national economy has developed, and the population has lived in this oasis for thousands of years. However, by the beginning of the 20<sup>th</sup> century, the situation was changing, as a result of an increase in the population and numerous developments of river water by residents located in the area of the upper reaches of the Zarafshan river, it became increasingly difficult for water to arrive in the Bukhara oasis and especially in the city of Bukhara. The inhabitants of the city of Bukhara also used standing still water in ditches and ponds as drinking water in the early 20<sup>th</sup> century. Especially on hot summer days, the ingress of various microbes and debris into the waters in the pools served to make the waters unsuitable for drinking and to increase the incidence of various diseases. It should be noted that this situation has also had a great impact on the health of the population in the city. At the beginning of the 20<sup>th</sup> century, the people of Bukhara were extraordinarily religious, and the city finally had a minority of people aware of modern medical sciences.

At the beginning of the 20<sup>th</sup> century, among some business people, entrepreneurs from Bukhara, the acquisition of modern Sciences, the introduction of scientific and technological achievements even in the city of Bukhara, which is lagging behind the advanced States, has increased in number. One such was the son of Mirza Siraj Hakim Mirza Abdurauf (1877-1914), a wealthy merchant class, who traveled to European and Asian countries and trained in modern medicine in Bern, while in Iran he trained as a physician under the name Sobir. Illegal was in Afghanistan, accused of espionage, and spent a year in an Afghan dungeon as well. Having personally freed Habibullakhan himself, he returned to his native Bukhara in 1909 [17. 225]. We can see that the knowledge gained is aimed at improving the health of the inhabitants of Bukhara and the environmental, above all hygienic, condition in the city. Mirza Siraj Hakim was the first to open a modern hospital in Bukhara in 1910 by representatives of the local population. In it, he became a doctor himself, using the knowledge he had gained in Europe and the experiences he had gained in Iran to heal Bukharan patients. However, it should be noted that a large part of Bukharians at the beginning of the 20<sup>th</sup> century were extremely religious and did not look positively at modern media and techniques. It is necessary to promote the achievements of modern medical sciences, science and technology among the local population. As a result, on the initiative of Mirzo Siraj Hakim and another rich Bukharan merchant Muhiddin Mansurov, the first ever Periodical Press in the emirate of Bukhara, "Bukharoyi sharif", began to be published in Persian-Tajik on March 11, 1912. Three months later, on June 11, the Uzbek newspaper "Turon" also saw the face of the publication, considering that a large part of the population of the emirate of Bukhara was made up of Uzbeks. Mirza Siraj Hakim's services were great in seeing these press bodies face the world, and Siroj Hakim tried to introduce the Bukharan people to the achievements of modern media in his articles "Health care" in the "Bukhoroi sharif", which he mainly kept and published articles [1. 187]. In a word, he tried to improve the medical knowledge of the population on the path of Public Health.

Mirza Siraj Hakim "Bukhoroi sharif" published more than 30 articles under the column "Hifzu safh'a" ("Health") on the pages of the newspaper from 26 March 1912 to 12 July 1912. The articles cite the prevalence of infectious diseases in the city of Bukhara, its causes. Also, articles published by Mirza Siraj Hakim describe the state of Health in Bukhara at the beginning of the 20th century, the fact that public health is in a deplorable state, ringworm

(subcutaneous worms), sweating, chronic lung diseases and other infectious diseases are common. The origin of diseases was analyzed by him due to factors such as pollution of the waters in the ponds of the old Bukhara city, cleanliness in the streets, non-compliance with sanitary and hygienic rules. In particular, in one of the issues of the newspaper “Bukhoroi sharif”, the fact that drinking water in Bukhara is extremely plentiful, in the summer months there is a rishta (Rishta - *Latin Dracunculus medinensis*. belongs to the worm (Nematodes) Class, a disease in which mammals grow and parasitize under the skin. Spread in tropical and subtropical regions) has been cited as an increase in disease, and we see that the last of the article also contains two lines of poetic stanzas:

“Фаришта гар хўрад оби Бухоро  
Барояд ришта дар пойи фаришта”  
Translation:  
Angel if he drinks water of Bukhara,  
From the foot of the Angel also becomes infested with worm [16].



**Fig. 1.** Images of ring disease larvae, common in Bukhara, ways of transmission to human

From the first issues of Bukhoroi sharif, we see that Mirza Siraj Hakim has slowly explained the rules of medical sciences as well, explaining the people of Bukhara by their hygienic practices, the purity of body and soul is dictated by Islam, the environment, that is, the streets, ditches and canals are not dirty, it is both a human and religious duty.

In particular, in the 14th issue of the newspaper “Bukhoroi sharif”, Mirza Siraj Hakim said that a number of infectious diseases that can spread rapidly in Bukhara, including cholera, plague, toun, tabl, tuberculosis, spread from non-basic drinking water consumption, through germs that appear in wet and dirty places, the abundance of such places in Bukhara city and suburbs, by cleaning them, it is possible to somewhat improve the environmental situation in the city and encourage the population to prevent the spread of infectious diseases [9].

As mentioned above, in the upper and middle reaches of the Zarafshan River at the beginning of the 20th century, the increasing availability of river water by the population began to prevent sufficient water from arriving as far as Bukhara. As a result, a drought began to be observed in Bukhara during the peak of agricultural activity in the summer months, when the demand for water increased. This was a factor in the rise of infectious diseases through the stagnant, drying up of runoff in the city’s ditches and canals and the consumption of standing water in the ponds. The main culprit of the severe environmental situation was found by some individuals to be the government, who also made their own comments about it in the periodical press. For example, in the 26th issue of “Bukhoroi sharif”, published on

April 10, 1912, an unnamed author; In the article named “Bukhara 7-jumadul-avval”, somewhat criticized the work of the government, noting that with the decrease in water access to Bukhara, agricultural work is shrinking, land erosion with increasing dehydration, desertification is also falling out of the way, the Russian political agency based in New Bukhara (Kagan) has formed a commission and took over work to bring water to Bukhara and its surroundings [2]. It can be understood from the content of the article that the author tried to show that the abundance of water in Bukhara is of great importance not only for agricultural work, but also for the health of the population.

Analyzing articles written in Bukhara newspapers “Bukhoroi sharif” and “Turan” in a tone dissatisfied with the ecological and hygienic state of Bukhara, it can be concluded that the culture of Urban Planning in Bukhara at the beginning of the 20th century was in crisis. The newspaper “Ishqabad” (“Ashgabat”), published in the city of Ashgabat, considered the Central City of Transcaspean province in the Turkestan general governorate, also paid a guest to the city of Bukhara and wrote an article in the newspaper “Bukhoroi sharif”, in which the person expressed his personal attitude of local client without specifying his name. The author really cited the correctness of the feedback in the article, which was written criticizing the dirt of streets and ditches in Bukhara. The author believes that in reality the streets of the city of Bukhara are narrow, dirty, most people living in the city throw garbage from their homes into the streets, and even, corpses of dead puppies and cats into the streets, ditches. A few days later, there were examples of horrible smell of the dead of these creatures reaches the point of inhaling, and when an involuntary person awakens hatred, no one will take them to separate landfills. The government was asked to involve every street, around the markets, the ditches in the forced cleansing of the population by ordering local elders. It was also requested that the streets, ditches should be constantly ordered to carry out cleaning work one day a week [3]. However, we have not met the information so far regarding whether the government has fulfilled this requirement or not.



**Fig. 2.** Sewage strewn in the Chorminor street in the Bukhara city, waste water. Photographed in 1913.

The lack of fresh water in the ditches and ponds in Bukhara was also demonstrated in the shrinkage of cultivated land and gardens. There were a number of efforts to improve the ecological situation by landscaping and greening the city of Bukhara, one of which was a plan to divert water from Amudarya to Bukhara by mining a large trunk canal. The idea originally came from the pen of Ahmad Danish, the last encyclopedist scholar of Bukhara, who addressed Emir Muzaffarkhan in this regard. This appeal of Ahmad Donish was gone in vain, and it can be concluded that the media outlets of the Bukhara was the next promoter of this idea. Ghiyas Alidin, an active correspondent of the newspaper “Turan”, who later became an editor of Modern Sciences in Istanbul, was one of the active supporters of the use of Amudarya waters in the improvement of the ecological situation in Bukhara. He published

in his article that the city of Bukhara and its surrounding districts have difficulty with dehydration, and the people of Bukhara are doomed to drink the waters in the ponds, which cause all kinds of diseases, demanding the government to take a practical step around Bukhara not only to improve the environmental situation, but also to preserve agriculture, greenery, gardens. To do this, it was asked to dig a large trunk Canal from Amudarya towards Bukhara and attract to this development three thousand people from local peasants, providing them with various means. We can also read that, according to the author's calculations, it was noted that the duration of mining the channel is 87 days [4]. The title of the article "Imrani Vatan" also referred to the prosperity of the Emirate of Bukhara. Unfortunately, since the Emir of Bukhara also ignored this proposal, the environmental situation and public health in the city of Bukhara were aggravated day by day.

Mirza Siraj Hakim, considered the soulful of the health of the inhabitants of the city of Bukhara, encouraged the local rich and progressive to take advantage of the achievements of modern technology. In one of his articles, he notes that the main reasons for the origin of various infectious diseases are pollution of the air of the city of Bukhara, the reason for which garbage is thrown into the streets, and even the water used in the hammams was released into the streets, and drinking water was not kept clean. It was emphasized by the population that it is the consumption of water that is stored in pools and whose composition is disturbed by prolonged stay. Treated, cleaned and free of various microbes water by establishing a system of pumping water, as used in European cities in the supply of water, stopping the transport of water in the leather containers, which remained in the households of the population and was unfit for consumption was put forward. It can be seen that this has generated feedback from progressive-minded people regarding the need for some enthusiasm [12].

Also, one of the ideas put forward by Mirzo Siroj Hakim was the problem of the accumulation of wastewater on the streets of Bukhara. In one of his articles, the author proposed to introduce sewers, drainage systems in the city in order to get rid of wastewaters; the accumulation of wastewater on the streets of Bukhara, the presence of cases when various wastewater is also thrown into the streets by residents, which worsens the environmental situation in the city. In the course of the article, it was noted that these works have already been established in European cities, so that in three to four minutes after rain on the streets of European cities, water flows out of the city through drainage systems, in Bukhara, it is also possible to establish these works and prevent hygienic conditions and various contagious diseases, by covering the street with the tiles, which in its turn can improve sanitary situation in the ancient city [8]. The distrust of the local population for the achievements of Science, Technology did not make it possible to implement this idea. Even so, representatives of the Bukharan press have repeatedly made articles on improving the environmental situation in the city of Bukhara. The editor of "Bukhoroi sharif" was Mirza Jalal Yusufzoda, signed as "Jalal" under his articles covering the issues of environment. The article "Vazaif" ("Tasks"), published by Jalal on May 18, 1912, and titled his paper focused on the implosion of water in ditches, canals, ponds and puddles in the vicinity of Bukhara, their non-purification, especially the presence of various animals lying dead in reeds on land where groundwater rises, their negative impact on the environment, causing various diseases to spread, cleaning of these abandoned areas would positively impact on the ecology of the city [7].

Mirzo Jalal Yusufzoda, in his article "Nazafat" ("Tidiness") in Bukhara city, focusing on the environmental situation in Bukhara city as of No. 18 of Bukharoyi sharif, cited the importance of being clean and tidy about disease prevention. Because, by starting to explain to the extraordinarily religious people of Bukhara by reminding them that cleanliness and purity are one of the requirements of the Islamic religion, he tried to explain the need to use the achievements of Science and modern techniques, their positive consequences. Alternatively, we can see that references to the advice of doctors from modern, advanced European countries to follow the rules of cleanliness and hygiene are cited in his Article [5].

It can be concluded that the content of the articles written by Mirza Siraj Hakim consisted of advice aimed at maintaining the health of ordinary residents in the conditions of the harsh environmental situation of the city of Bukhara. These points can be substantiated through the feedback in the series of articles that will be presented below. For example, an article in “Bukhoroi sharif”, No. 15, published on 28 March 1912, provided people of Bukhara with advice regarding strict adherence to the agenda in order to avoid disease due to the heat of the air and the severity of the environmental situation in Bukhara [10].

The newspaper's April 1, 1912, article under the Column “Healthcare” noted that breathing was in two ways, inhaling the human organism through the body, not just the mouth, while keeping the body's skin clean improves breathing through the skin. It can be seen that issues of the impact on human health, breathing through the lungs saturate the blood in the body with oxygen, the lungs are mainly made up of blood vessels, in general, data on the functions of the lungs have been cited in the newspaper [11]. In a word, Mirza Siraj Hakim was trying to instill in Bukharians information on the rules of Hygiene and the formation of modern medical concepts.

As per information presented in the column “Health” in the Issue 19 (April 2, 1912) of “Bukhoroi sharif”, we can see that Islam also prescribed the need for the environment and loved ones to be hygienically clean in order to ensure the health and beauty of the human body, the Basic Rules of hygiene, explained on the basis of Islamic beliefs [6]. The day after, in the 20th issue of the newspaper on April 3rd, it was explained what the functions of nasal hair are when inhaled through the wool of the nose at the same time as touching on diseases that can be transmitted through breathing. It can also be seen that when the body temperature rises, it is necessary to drink more fluid, trying to explain to the population in simple language such as the functions of blood vessels [14]. Later issues of the paper also contain a large amount of data on body temperature and the reasons for its change. And the scientific information about body temperature was cited in the 27th issue of Bukhoroi sharif, published on 11 April. In this article, Mirza Siraj Hakim touched on the causes of human body temperature, temperature rise and decrease, the difference in body temperature of a young child and an adult, the fact that the temperature of 36.5-43 0C is the limit of human body vitality, lower or higher leads to biological death, methods of raising or lowering body temperature in various [15]. Slowly, we can see that scientific data began to prevail in the articles of Mirza Siraj Hakim. Mirzo Siraj Hakim considered it advisable to give information on the science of the medium through the common contagious diseases that were common in Bukhara at that time and the methods of their treatment.

In particular, it was reported in the city of Bukhara city, one of the most common diseases in the spring and autumn seasons was obila (Tuberculosis), Mirza Siraj Hakim in his article called “On the issue of obila disease”, mentioned that, they consider this disease to be an incurable disease among the people, however, treatment of this disease has been found in medicine, the goal is that the people should treat the diseased medically without addressing various healers or self-declared doctors, as it was common to treat the disease using cow milk, and it has also given a comprehensive description of obila medical disease [11]. Many more such articles can be found in the “Bukharoi sharif” newspaper.

In the newspaper “Turan”, considered as one of the prominent articles of the Bukhara press, one can also find a number of articles that serve to convey various diseases, their description of the medicine, methods of treatment to the general public. As an example, the December 24, 1912, issue of “Turan” cited considerations on what needs to be done regarding the disease town (plague) and the causes of its origin, the symptoms of the types of plague, the order in which humans are infected, the non-infection of town) [18]. However, it should also not be overlooked that information about the procedure for treating this disease has not been cited.



## 4 Conclusion

A number of reasons and factors can be attributed to the aggravation of the environmental situation in the city of Bukhara at the beginning of the 20th century. First the claiming of the new lands in the upper reaches of the Zarafshan River and the arrival of less and less water in Bukhara every year. Secondly, local officials, first of all, the authorities, did not look for or did not want to find alternative water reserves in Bukhara and its environs, which can be environmentally, economically and from the point of household beneficial. Plans to bring water from the Amudarya have also been rejected several times. Thirdly, the depressed urban planning culture among the population of the city of Bukhara and the nesting of garbage on the streets, ditches paved the way for the development of microbes and diseases that are dangerous to human health.

As a result, various contagious diseases were spread in Bukhara. Local government and officials did not make practical efforts to prevent this. Efforts by some intellectuals, progressives, to keep the city of Bukhara clean, to improve the hygiene of the city by supplying drinking water to the population through the floodplain chases, have been ignored. And the fact that some progressives, enlighteners (Mirza Siraj Hakim, Mirzo Jalal Yusufzoda) tried to give advice and concepts regarding the observance of hygiene rules and the maintaining the rules of health, sanity regarding their own health, as far as possible, reached us through the periodic press.

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