



## MEDICAL POLICE SERVICE, SANITARY AND DRINKING WATER SUPPLY IN TURKESTAN

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<b>Received:</b> 28 <sup>th</sup> April 2021 <b>Accepted:</b> 11 <sup>th</sup> May 2021 <b>Published:</b> 8 <sup>th</sup> June 2021	The article covers the issues of medical police, sanitation and drinking water supply in Turkestan in the late XIX - early XX centuries. Although a number of measures have been taken to implement sanitary measures and provide quality drinking water, these works have not been implemented. The population still drank water from canals and wells, new wells were dug only in large cities, and sometimes water was brought from springs and sold, but it was stated that the majority of the population could not afford to buy water.
<b>Keywords:</b> Tashkent, Turkestan, Russian Empire, TurkestanskijeVedomosti, SadoiTurkiston, Chirchik River, Bozsuv, Darkhan River, Salar River, Duma, Golovachev and Tsurikov springs, sanitary control, medical police, sanitation	

F.A. Brockhaus and I.A. Efron's encyclopedic dictionary defines the term "medical police" as follows: "The activities of state and public institutions that protect public health are of a warning nature, that is, aimed at the prevention of disease. Disease prevention measures, all measures that endanger health and human life in general, are the subject of medical police, which should not be confused with police medicine, which is part of forensic medicine."<sup>1</sup>

One of the important stages in the evolution of the legal provision of health care in the Russian Empire was the adoption in 1857 of the Charter of Medicine. Then 1892<sup>2</sup> and in 1905<sup>3</sup> an amendment to this charter has been adopted. This charter consisted of three parts, which were the charter of medical institutions, the charter of the medical police, and the charter of forensic medicine. The impact of harmful environmental factors on human health in this charter, taking care of the purity of the atmospheric air, controlling the production, sale and storage of food, and supervising the observance of the rules of burial of the dead are specified as the main tasks of the medical police.

The medical police had to establish control over the planning, organization and implementation of measures aimed at preventing disease epidemics, as these measures were necessary to protect the health of the population and protect the state economy. The second half of the XIX century - the beginning of the XX century Medical police later became an example of sanitary-epidemiological service in the Soviet era<sup>4</sup>.

One of the main tasks of the medical police and municipal institutions is to sell obsolete or unhealthy food in the markets, slaughter meat of sick animals and poultry, control the quality of imported food, prepare food containers from materials that are not harmful to human health, establishment of laboratories, conducting microscopic, chemical microbiological research of food, combating the sale of counterfeit and spoiled food<sup>5</sup>.

In 1867 in Tashkent a city doctor and a midwife provided medical services to the population. However, given that there were almost no midwives, 2 paramedics were appointed to replace her. One of the paramedics served on a regular basis at the prison hospital. In addition to providing medical care to the population, the city doctor had to dissect the bodies of those killed, that is, conduct a forensic medical examination and monitor the population's compliance with medical police procedures<sup>6</sup>.

<sup>1</sup>Энциклопедический словарь / под ред. проф. И.Е.Андреевского. Т. 18а. – СПб, 1896. – С. 891-892.

<sup>2</sup>Устав врачебный // СПб. Свод законов Российской империи. Т.13. 1892. - 341с.

<sup>3</sup>Устав Врачебный // Свод Законов Российской Империи. Том XIII. СПб., 1905.

<sup>4</sup>Устав Врачебный // Свод Законов Российской Империи. Том XIII. СПб., 1905.

<sup>5</sup>Шнейдер П.И. О мерах врачебной полиции противобстоятельств вредных обществу или о вредных вещах, угрожающих здоровью людей в пище, в питье и другихнеобходимых в общежитии предметах, о средствах узнаватьумышленные и неумышленные вредные подмеси ипредохранять здоровье от опасности, также о вредном влиянии на общество и искоренении ядовитых растений и лжеврачейили шарлатанов / П.И. Шнейдер. – Москва; 1827. – 336 с.

<sup>6</sup>Добросмыслов. С.324.

With the onset of the hot season in 1883-1885, the city elders were instructed by the city elders to clean their houses and streets of garbage, to clean ditches and ponds, and to cover the rest with 4 cm of dry soil, taking into account the health of the population in the "old" part of Tashkent it is recommended that this work be carried out three times a week. Due to the outbreak of smallpox in the city, residents are advised to clean their homes, outerwear and floor mats (straw, cloth, felt and carpets) by ventilation and to remove all straw and old mats. It is also noted that during the epidemic, special attention should be paid to places where people gather - markets, squares, squares, caravanserais, mosques and madrassas. It was also necessary to establish control over the sellers of old and worn outerwear and footwear. The clothes they sold on the shelves were clean, and the buyers who bought them were able to wear them after being ventilated outdoors for 4 days. It was necessary to establish special control over the shops selling meat, dyes, leather goods. They are assigned to be subject to cleanliness and to sell their products on time. The city administration, with the introduction of the above, entrusts the elders with the supervision of these matters leather goods stores had to be put under special control. They are assigned to be subject to cleanliness and to sell their products on time. The city administration, with the introduction of the above, entrusts the elders with the supervision of these matters leather goods stores had to be put under special control. They are assigned to be subject to cleanliness and to sell their products on time. The city administration, with the introduction of the above, entrusts the elders with the supervision of these matters<sup>7</sup>. The local administration and the police were to carry out extensive advocacy work on sanitation and health among the population. Before the hot days came, residents had to clean their homes and dispose of waste accumulated during the winter months.

Of the City Administration of July 6-7, 1888 (Nos. 15 and 40), September 27, 1889 (Nos. 89), October 18, 1890, and December 20, 1890 (Nos. 49, 105, 123), and January 8, 1891 (Nos. 4). ) to carry out a comprehensive clean-up among the population. Before the transition to summer, the locals had to clean the yard from all rubbish and debris, remove the melted snow and ice to other places. Every homeowner was required to clear the area around the house of debris, clean the canals and pools, and not throw rubbish back in there. In addition, it is emphasized that the landfills should be carefully arranged, the pits dug for waste should be cleaned of all debris and lime should be thrown on them, in some cases it is possible to bury them with soil. Also all residents are required to ventilate their homes and outerwear, sweep houses, remove odors from walls and roofs, open windows and doors, ventilate bedding, blankets, and all floor mats, and burn old woven mats. These orders also require police officers to maintain order and cleanliness in densely populated areas - mosques, madrassas, markets, tim rows, caravanserais, and other places. Special attention should be paid to sellers of old clothes, old clothes purchased should be cleaned and worn after 7 days. it was noted that felt and all ground buckets should be cleaned and old woven buckets should be burned. These orders also require police officers to maintain order and cleanliness in densely populated areas - mosques, madrassas, markets, tim rows, caravanserais, and other places. Special attention should be paid to the sellers of old clothes, the old clothes purchased should be cleaned and worn after 7 days. it was noted that felt and all ground buckets should be cleaned and old woven buckets should be burned. These orders also require police officers to maintain order and cleanliness in densely populated areas - mosques, madrassas, markets, tim rows, caravanserais, and other places. Particular attention should be paid to the sellers of old clothes, the old clothes purchased should be cleaned and worn after 7 days.

Ensure that all elders and regulators keep all equipment clean in meat shops, as well as relocate old leather goods repair shops in front of the blacksmith market and pay attention to cleanliness, and ensure that artisans maintain cleanliness and tidiness. function is given<sup>8</sup>.

Until June 13, 1902, only one police doctor in Tashkent, Samuil Markovich Stekolnikov, was in charge of sanitary control. On April 11, 1909, a second sanitary doctor was appointed. Sanitary doctors regularly inspected various commercial and industrial establishments, grocery stores, courtyards and other places. Under their leadership, the homes of people suffering from infectious diseases were disinfected. In addition, sanitary physicians were required to monitor patients outside of medical facilities during epidemics<sup>9</sup>. The guideline for sanitary doctors to monitor the sanitary condition of the city was developed in early 1911 and approved by the Duma.

In order to improve the health and sanitation of the city, the Tashkent City Duma in the early 1900s on the basis of Articles 103 and 104 of the Charter of the city adopted decisions that must be implemented for the "new" part of the city: 1) to maintain cleanliness in courtyards, streets and squares, taking garbage out of town; 2) keeping the kitchen, meat and fish stalls clean. These decisions were amended in 1900, 1901, 1902, 1903, and 1904. In 1909, the City Duma developed a new resolution to replace the previous decisions on the sanitary condition of the city, and it was adopted in 1910. This decision also applied only to the "new" part of the city. However, no such decision was made in accordance with the lifestyle of the residents of the "old" part of the city<sup>10</sup>.

During the plague epidemic of 1908, a sanitary council of officials and doctors was established under the city administration, which met 17 times in 1909 to discuss the problems. Beginning in 1909, the Sanitary Bureau under the city administration began its work and collected and analyzed data on diseases in the city. Since April 1909, this

<sup>7</sup>ЎзМА, И.36-фонд, 1-рўйхат, 2829-иш, 6-8 варақлар.

<sup>8</sup>ЎзМА, И.36-фонд, 1-рўйхат, 3349-иш, 35-варақ.

<sup>9</sup>Добросмыслов С.344.

<sup>10</sup>Добросмыслов А.И. Ташкент в прошлом и настоящем. Исторический очерк. – Ташкент: Типолиитография О.А.Порцева, 1912. –С.344.

bureau has been publishing monthly information on medical and sanitary issues in Tashkent, including the spread of diseases in the city. Up to 1,000 rubles a year have been allocated for the financing of this sanitary bureau<sup>11</sup>.

The constant outbreak of cholera, smallpox, typhoid, measles, and plague epidemics in the city has created a need for the city administration to pay attention to the sanitary condition of the city. As a result, the head of the city administration N.G. Mallitsky on November 17-18, 1910 in the city administration read a report "On improving the sanitary condition of the city." After lengthy discussions, the city council decided to remove garbage from courtyards and streets, to completely clean paved streets, to pave most of the streets with partially paved streets, and to pave or concrete the streets where drivers gather. On January 1, 1911, two sanitary inspectors were appointed in the "new" part of the city, with a salary of 1,800 rubles a year.<sup>12</sup> In addition, these meetings discussed the issue of covering furnaces, ditches with bricks or other durable materials for incineration.

According to the decision of the Tashkent City Duma on November 18, 1910, a sanitary inspection consisting of two sanitary inspectors and two police officers was established for the "new" part of the city. The whole city was divided into two districts, and one sanitary inspector was appointed for each. Their responsibilities include courtyards, commercial and industrial facilities, public places, hotels, caravanserais, teahouses, restaurants, cafeterias, baths, barbershops, meat and fish stalls, bakeries, confectioneries, fruit juice and kvass production facilities, candy factories, Systematic sanitary control of factories, plants, warehouses, various workshops, printing houses, paint companies, markets, "septic tanks". The Voskresensky and Kurini markets were not inspected by a sanitary inspectorate because they were inspected by a sanitary doctor. The Sanitary Inspectorate began its work on March 1, 1911.

Sanitary inspectors each submit a monthly report on their district, in which the number of inspections carried out, including the number of inspections of courtyards, commercial and industrial facilities, markets, factories, plants, workshops, protocols and fines imposed by judges for violation of sanitary regulations data are reflected. In addition, sanitary inspectors submitted annual reports to the city administration for each district.

#### Report of Sanitary Inspectors for 1911:

	1- sanitary district (Police Stations 1-8 on the west side of the Chovli River)	2-sanitary district (3-18 police stations on the east side of the Chovli stream)
Total number of inspections	2701	2390
Number of institutions at the demand level	2013	618
Number of institutions that are not in demand	688	1872
Number of notices of violation of sanitary regulations	535	562
Thenumberofprotocols	113	73
Amountoffines	1553 rub.	944 rub.

Minor violations of sanitary regulations, but generally considered clean, were considered satisfactory, and measures were taken if serious violations were committed. If an unsatisfactory verbal warning was given at the time of the first inspection, a written notice was given to the owner of the facility if the inspector's instructions were not complied with at the next inspection, and a time limit was set for correcting the deficiencies. The district is rotated every day except public holidays, with each inspector conducting more than 20 inspections per day increased.

The report of the Tashkent city sanitary doctor for 1911 provides information on how many examinations were carried out during the year. For example, in 1911, the Tashkent city sanitary doctor conducted 545 inspections, including markets, factories and various trade and industrial facilities. At the same time, the staff of the institutions was also inspected. As a result of the inspections, 53 protocols were drawn up, mainly related to non-compliance with cleanliness in commercial and industrial facilities. Sometimes the sweet cakes were taken for inspection on suspicion of being poisonous. Markets are inspected by doctors on average 5 times a month, and commercial and industrial facilities and private homes 40 times.

In 1912, there were two sanitary doctors in Tashkent, one supervised the sanitary condition of the city and the other the epidemiological situation. The lack of sanitary doctors in the country was also one of the obstacles to improving the work. In 1911, two months after the epidemiologist Dr. Reyngardt was transferred to the city hospital as an ordinator, his position remained vacant. His duties were performed by the sanitary doctor V. Lysenko had to do it. On December 5, 1911, Konakhov was appointed as an epidemiologist<sup>13</sup>.

<sup>11</sup>Добросмыслов А.И. Ташкент в прошлом и настоящем. Исторический очерк. – Ташкент: Типолитография О.А.Порцева, 1912. – С.345.

<sup>12</sup>Добросмыслов А.И. Ташкент в прошлом и настоящем. Исторический очерк. – Ташкент: Типолитография О.А.Порцева, 1912. – С.345.

<sup>13</sup>Врачебно-санитарная и ветеринарная хроника гор. Ташкента за 1912 г. – Ташкент, 1913. - С. 22-29.

In monitoring the sanitary situation, doctors acted on the basis of special regulations and decisions of the city Duma. Initially, sanitary doctors immediately drew up a protocol if they identified people who violated the rules during the inspection. However, in practice, it has been found that working in such a way is not beneficial, i.e. the execution of the protocol goes through too many organizations, resulting in the sanitary condition remaining the same, forgetting what the respondent is even when he is sued. Therefore, later, the protocol was only drawn up as an exception, and those who violated the rule were given a written notice. In cases where it is possible to fix it on the spot, it was done immediately, for example, old fabrics without kerosene, disinfectant sealants were removed from the market. Such measures were carried out with ease as there was a police officer next to the paramedics. It should be noted that although it was decided long ago to attach a police officer to the sanitary doctor, it was only in mid-1912 that this measure began to be implemented. The attachment of a police officer to him made his job a little easier, as the paramedic no longer had to call the police for help if necessary. Until then, he could only reprimand those who violated the rules because sanitary doctors had no authority. because the sanitary doctor did not have to call the police for help if necessary. Until then, sanitary doctors could only reprimand those who violated the rules because they had no authority. because the paramedic did not have to call the police for help if necessary. Until then, sanitary doctors could only reprimand those who violated the rules because they had no authority.

In addition, various sectors of production in Tashkent, including sausage factories, candy and biscuit factories, have not been able to avoid violating penalties due to the lack of special decisions on inspections of laundries or the ambiguity of some decisions.

One of the painful points for sanitary control was the process of seeing the case in court. They sometimes had to wait for hours for judges to receive them for three rubles. As a result, it turned out that either the court was postponed, or the medical doctors were summoned in vain. Most importantly, sanitary physicians found it difficult to deal with large businesses because they had experienced lawyers on their side and used members of the sanitary inspectorate and witnesses to their advantage, without a representative from the city administration to represent the city's interests.

Waste and their treatment was a key factor in compliance with sanitary regulations. The pits for the aunts and the pits for the wastes were never cleaned, mainly because they were dug deep, they were collected for years and then buried. Aunts are often not kept clean and disinfected. In the courtyards along the ditches, the cousins were lined up along the ditches, and some dumped garbage and waste into the Chovli and Salar ditches.

The waste was not separated and contained a lot of waste from the decomposing kitchen, which was not removed for several weeks. One-hundredth of the municipal waste was removed to the city landfill, and the rest was buried in the backyards or dumped in nearby backyards and vacant lots, resulting in a number of landfills on the outskirts of the city. The waste was usually transported in carts, despite a special decision, and therefore the waste was dumped on the city streets along the way.

The general condition of the baths in Tashkent was satisfactory, but all of them had problems with the discharge of used water, which was secretly discharged into canals. In hotels, restaurants, buffets, sheets, pillowcases, towels and tablecloths, dishes, the kitchen in general and its staff were not clean, and staff in contact with food were not routinely medically examined.

The fact that the building of the tractors was too narrow caused their unsanitary condition. The buildings of the kitchens were also mostly very narrow, the rooms were small and low, especially the kitchens near the Horse Bazaar and the Shymkent tract were dirty. The building of the bakery and confectionery was also very narrow, as the flour was used without advertising, there was waste in the dough, rat droppings, and the health of the workers was not checked. In addition, meat and fish stalls in all parts of the city did not meet the demand.

In the early twentieth century, the issue of providing clean drinking water to the population in Turkestan remained relevant. In 1912, a Tashkent sanitary doctor analyzed the city's drinking water. Due to the influx of water from the Chirchik River into the Tashkent canals, the water of the Chirchik River will also be tested. Groundwater is divided into districts, and the average of the analysis of wells in the "new" and "old" parts of the city and the water of the Golovachev springs are checked. Walter and Gertner norms were used to assess water quality. As a result of these analyzes, drinking water in Tashkent the quality of the vine was determined.

The water of the Chirchik River fully met the sanitary requirements, and it was recommended to drink it only in some seasons, for example, in the spring, after it has calmed down. As the water of the Bozsuv stream flowed directly from the Chirchik River, its composition and quality did not differ, it contained only floating particles, so it was noted that it met all sanitary requirements.

It was concluded that the water of the Darkhan stream was almost indistinguishable from the water of the Bozsuv stream, as it passed through the upper part of the Salar stream, a sparsely populated area, and that its water was satisfactory. But the difference from the water of the Salar stream was great because the water of the Salar stream contained ammonia as well as nitric acid. In addition, according to bacteriological analysis of the water of the Salar stream, 1 cu. The amount of microorganisms in cm reached 1525-35840, especially in the lower parts of Chovli was much higher than the norm, ie 1 cubic. There were 100-300 microorganisms in cm. According to Teix, the amount of microorganisms in the water of the Salar stream was less in the morning than in the afternoon and evening.



The amount of floating particles in the water of the Salar stream was also high, i.e. 36-60 milligrams or 1 cubic meter in 1 liter of water. There were particles weighing 1 to 45 grams, depending on the season, in a bucket of water that weighed 36-60 grams per meter.<sup>14</sup> The difference between the water of the Salar stream and the water of the Chovli stream was small. It had a large amount of bacteria, ie 1 cubic meter. sarjin (9003) also contained ammonia, but the water of the Salar stream also sometimes had high levels of bacteria. The pollution of the Chovli ditch was due to the fact that it flowed all over the city and discharged small ditches as well as waste from the courtyards along the Chovli. In general, river and stream water differ in softness. Groundwater is different from rivers and streams.

Sanitary doctors in Tashkent also analyzed well and spring water. In particular, in 1912, water from 11 urban wells and 8 private wells in the "new" part of the city were inspected. As a result, the average hardness of water in 11 urban wells was 28.8 degrees Celsius, 694 milligrams of thick sediments, 296 milligrams of alkali, 160 milligrams of sulfuric acid, 20 milligrams of chlorine. Ammonia residues were found to be present in 1 well water, nitric acid residue in 1 well water, and ash effect in 5 well water.

Examination of water from 8 private wells revealed that their water was slightly different from the water of urban wells, with an average hardness of 31°, 862 milligrams of thick sediment and alkaline and sulfuric acid above normal.

City sanitary doctors also examined the water in five wells in the "old" city, which had an average hardness of 18°, thick sediments, alkali and sulfuric acid. Ammonia and nitric acid were not found in all wells in the "old" city, and residues of nitric acid were found in two wells. In the three wells, the water softness was 9°, 12° and 16°.

Based on the analysis, the water in the "old" city wells met the sanitary requirements better than the water in the "new" city wells, comparing the "old" and "new" city water. But even in the "new" part of the city, well water that met all sanitary requirements, such as well water in a 4th grade urban school and an apartment on Lakhtin Street, was good. Also, the water of Golovachev and Tsurikov springs met sanitary requirements<sup>15</sup>.

Thus, the water of the Chirchik River, Bozsuv and Darkhan canals, Golovachev and Tsurikov springs met sanitary requirements, and the quality of water in the "old" city wells was much higher than in the "new" city.

In the late 19th and early 20th centuries, issues related to the sanitary condition of Tashkent were widely covered in the Turkestan press. In order to improve the sanitary condition of Tashkent, first of all, it was necessary to provide the population of the city with quality drinking water. Various specialists, including doctors, engineers and various categories of officials, stressed in the newspapers that it is important to provide the population of Tashkent with quality drinking water.<sup>16</sup> They emphasize that it is not advisable for the population to use canal water as drinking water, and some to use well water, especially in cities, and that funding for quality drinking water should be provided at the expense of the city and the state. The author notes that this task of the state stems not only from the idea of statehood, the idea of common welfare, but also from the fact that everyone has such a right, and the provision of quality drinking water is also beneficial for the health of future generations.<sup>17</sup>

In the Turkestanskii Vedomosti newspaper, published on August 22, 1893, the secretary of the Turkestan branch of the Imperial Russian Technical Society, N.I. Gabbin's article, "On Rational Water Supply in Tashkent," cites world experience as an example of how many health problems can be solved by providing the population with quality drinking water, a sharp reduction in mortality in countries where water and sewage pipelines run. despite being considered unnecessary work, it is said that in this way the health and life of the people are preserved. In Paris, for example, after the installation of a water filter, deaths from diarrhea were reduced by 3 times<sup>18</sup>.

When the canal water, which is the main drinking water in Turkestan, is studied by researchers, experts come to the conclusion that this water is completely unfit for drinking. In 1879, Dr. Isakov discovered that these waters contained a variety of harmful worms and microbes, even ringworm embryos, and that alkaline elements and organic matter were much higher than normal.<sup>19</sup> N.B. Teix, who later conducted research, also notes that the water in Tashkent's canals and pools is extremely polluted.<sup>20</sup> Articles with detailed analysis of the quality and composition of drinking water are often published in the press, and the results of the research are presented to the general public.<sup>21</sup>

<sup>14</sup> Врачебно-санитарная и ветеринарная хроника гор. Ташкента за 1912 г. стр. 38-39.

<sup>15</sup> Врачебно-санитарная и ветеринарная хроника гор. Ташкента за 1912 г. стр. 38-39.

<sup>16</sup> Шишмарев И.А. Несколько строк о Ташкенте / ТВ. 1891. № 20; О рациональном водоснабжении г. Ташкента / ТВ. 1893. № 65, 69; Васильев Н. Наша общая беда и как помочь ей. / Окраина. 1895. № 61, 62, 64, 66, 68, 71, 73; К вопросу о санитарном состоянии Ташкента / ТВ. 1897. № 7; Габбин Н. Несколько цифр к вопросу об устройстве водопровода в Ташкенте / ТВ. 1900. № 20.

<sup>17</sup> Васильев Н. Наша общая беда и как помочь ей. / Окраина. 1895. № 61, 62, 64, 66, 68, 71, 73.

<sup>18</sup> О рациональном водоснабжении г. Ташкента / ТВ. 1893. № 65, 69.

<sup>19</sup> Шишов А. О необходимости водопровода в городе Ташкенте / ТВ. 1907. № 177.

<sup>20</sup> Teix Н. К вопросу о водоснабжении г. Ташкента / ТВ. 1905. № 93.

<sup>21</sup> Шишов А. О водоснабжении Ташкенте / ТВ. 1902. № 16; Шишов А. Два слова о ташкентском водоснабжении / ТВ. 1905. № 2; А-в А. Одна из неотложных нужд города Ташкента / Среднеазиатская жизнь. 1907. № 218; Колпаков А. К вопросу о водоснабжении города Ташкента / ТВ. 1908. № 57; П-ов. К вопросу об оздоровлении г. Ташкента / Туркестанский курьер. 1909. № 42.

At that time, the people of Tashkent used to use the water from the ditch that flowed on both sides of the street and into each yard, and used this water for household chores. The canals were not always full, and sometimes they dried up. As a result, various organic substances began to settle at the bottom of the canals. It should be noted that the water flowing from the ditch in the upper part of the city was clean and of good quality, while in the middle and lower parts of the city the quality was deteriorating. The city was plagued by waste from industrial plants, bathrooms and houses.

According to the *TurkestanskijeVedomosti* newspaper, the baths along the river (one on Obukhov Avenue and the other on Avenirovskiy) had to be closed immediately in order to purify the water of the Chovli stream, where the majority of the population drinks water.<sup>22</sup> One such bathhouse was closed in 1890.

In addition, there were 472 wells in the "new" part of Tashkent, 37 of which were unfit for drinking without water testing. When the water of the rest was analyzed, their water was found to be unfit for drinking in most cases in terms of mineral content. There were 32 dilapidated wells in the "old" part of Tashkent, which were cleaned and used again in 1909.<sup>23</sup> All the wells in the city were adjacent to the dumps and ditches. In addition, wells in Tashkent are shallow (average depth is 10 sarjins<sup>24</sup>) would also turn it into a waste tank. As the groundwater passed through the soil's moisture-retaining layer, it would enter the well in combination with various organic residues, nitric acid, ammonia, hydrogen sulfide, and other chemicals. According to experts, in the "new" part of Tashkent alone, 1,400,000 pounds a year<sup>25</sup>. The waste was absorbed into the ground, and this waste was enough to fertilize an area twice the size of this part of the city.<sup>26</sup>

Only water from Golovachev springs could meet the sanitary requirements to a lesser extent. However, most of the water from it is 400 barrels at a time, that is, from May to January<sup>27</sup>. It was possible to get water, and at other times, it was possible to get 250 barrels, in other words, 20,000 buckets of water per day were taken from this spring.<sup>28</sup> This amount of water could not meet the needs of the population of the "new" part of Tashkent. Moreover, due to the high cost of water, the majority of the population could not use it (on average 100 buckets of water were 1 r. 20 k.).

Acute infectious diseases were spreading and many people were dying due to excessive pollution of drinking water canals and improper irrigation. For example, in 1871-1872, 4,000 people died of the plague in the "old" part of Tashkent<sup>29</sup>. From June 7 to August 18, 1892, 1508 people died of the disease in the "old" and "new" parts of Tashkent<sup>30</sup>. In addition, diseases such as typhoid and diphtheria were widespread in Tashkent.

At the end of the XIX century, in order to provide the population of Tashkent with clean drinking water, it is proposed to regularly clean canals with the advice of doctors and technicians and develop measures to protect them from pollution, to establish permanent sanitary inspections<sup>31</sup>. An article in the *TurkestanskijeVedomosti* newspaper on January 26, 1897, entitled "On the Sanitary Situation in Tashkent," stated that there was no guarantee that the imported water was spring water, and that the barrels of watermen were deteriorating. Therefore, the author of the article suggests the establishment of closed canals in Tashkent in the first place, emphasizing that these canals can be open and controlled only in certain places, and thus prevent water pollution.<sup>32</sup>

Such a situation in the city has led to the repeated raising of the issue of water supply in the city Duma session. In particular, in 1910, N. Speaking at the City Duma, Mallitsky stressed the need for a water pipeline and a sewer line. However, he says that a lot of money (around 10-15 million rubles) will have to be spent to do this work, and that the city budget will not be able to bear such a cost. Therefore, to solve the problem of drinking water, it is still proposed to establish water distribution booths, not water pipes<sup>33</sup>. However, many efforts of the city administration were ineffective, due to lack of funds, in addition to the installation of water pipes and sewers, the bulk of other planned activities were not carried out.

In the early twentieth century, the national press began to report that the provision of clean drinking water was a guarantee of health, and that many diseases were spreading among people due to poor drinking water and the effects of swamps on the air, killing thousands. In particular, on June 24, 1914, in the newspaper "SadoiTurkiston" RaufMuzaffarzoda's article "A look at our drinking water" wrote that the water of drinking canals flows through hundreds and even thousands of yards, polluting it and making it unfit for drinking.<sup>34</sup> The author

<sup>22</sup> Шишмарев И.А. Несколько строк о Ташкенте. / ТВ. 1891. №20.

<sup>23</sup> Докладная записка о деятельности Ташкентского городского общественного управления / ТВ. 1909. №178.

<sup>24</sup> 1 саржин-2,134 метргатенгузунликўлчови

<sup>25</sup> 1 пуд-16,3 кг.гатенгоғирликўлчови.

<sup>26</sup> Габбин Н.И. О рациональном водоснабжении г.Ташкента. / ТВ. 1893. №69.

<sup>27</sup> 1 бочка-тахминан 480 литргатенгсуюкликўлчови.

<sup>28</sup> Водоснабжение в г.Ташкенте // ТВ 1910. № 256.

<sup>29</sup> Несколько строк о Ташкенте // ТВ. 1891. № 20.

<sup>30</sup> Холерная эпидемия в Туркестанском крае в 1892 г. // ТВ. 1893. № 101.

<sup>31</sup> Васильев Н. Наша общая беда и как помочь ей // Окраина. 1895. № 61, 62, 64, 66, 68, 71, 73.

<sup>32</sup> Водоснабжение в г.Ташкенте // ТВ. 1910. № 256.

<sup>33</sup> Водоснабжение в городе Ташкенте // ТВ. 1910. № 256.

<sup>34</sup> Музаффарзода Р. Ичарсувларимизгабирназар // СадоиТуркистон. 1914. № 21.

points out that the drinking water, which was finally clean and pure at the time of entering the city, became extremely polluted and unfit for drinking when it reached the middle and lower part of the city. Therefore, RaufMuzaffarzoda urges to use water sparingly and not to throw dirty things into the water, otherwise "a great crime will be committed against the nation in terms of health."<sup>35</sup> Because polluted water was the cause of many infectious diseases, it could lead to the death of thousands of people. The author of the article "The level of health and wellness is proportional to the level of national cleanliness and purity"<sup>36</sup>, writes that the issue of public health is a high-level national task.

In short, in the late nineteenth and early twentieth centuries, medical police and sanitary inspections were established to improve and control the sanitary situation in the country. But due to the lack of sanitary doctors, they were given a lot of responsibilities. Also, very little money has been allocated for the implementation of sanitary measures. Although a number of measures have been taken to provide the population of the region with quality drinking water, this work has not been done. The population still drank water from canals and wells, new wells were dug only in large cities, and sometimes water was brought from springs and sold, but the majority of the population could not afford to buy water.

The discussion of improving the sanitary condition of the country was widely covered in the periodicals. Experts, including doctors and engineers, expressed their views and suggestions on the issue of providing quality drinking water, which is especially important for the population. A lot of work has been done, but due to lack of funds in Tashkent failed to install water pipes and sewers. Experts have been able to show in the pages of newspapers, especially in the newspaper *Turkestanskije Vedomosti*, that the sanitary condition of the city is directly related to the health of the population, while regularly publishing the results of their research.

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<sup>35</sup>Шу ерда.

<sup>36</sup>Музаффарзода Р. Ичарсувларимизгабирназар / СадоиТуркистон. 1914. № 21.