

FROM THE HISTORY OF SALT PRODUCTION IN AZERBAIJAN

Salt lake Masazyr



Currently, the natural resources of salt in Azerbaijan are practically inexhaustible. Deposits are represented by fields of rock salt, modern lake salts and subsurface brines. Salt springs are known in Nakhchivan, Garadag district of Baku, Absheron, Salyan and other districts.

The most ancient salt deposit in Azerbaijan is in the valley of the Aras River on the southern slope of Mount Duzdag. According to archeologists, the first development of this field began five thousand years ago.

Since salt extraction from natural deposits is a sign

of civilization, archaeologists are first of all interested in ancient salt deposits.

The salt deposit on Mount Duzdag (literally “salt mountain”), which is one of the symbols of the city of Nakhchivan, attracted the special attention of scientists from France and the Academy of Sciences of Azerbaijan. Rock salt deposits in this place are so vast that its production is still being carried out. The Nakhchivan region is known for its underground and overland natural resources and mineral springs. Among these riches, a proud place belongs to the unique physiotherapy hospital Duzdag, located in a salt mine

Because of minerals water in the lake the red

on Mount Duzdag at a height of 1,173 meters in the territory of Babak District and 14 kilometers away from the city of Nakhchivan. The industrial development of rock salt has been carried out here since 1926; in 1970 an ancient mine was discovered during archaeological excavations. According to experts, there used to be an ancient human settlement in this place, as evidenced by the discovery of stone tools, which were used for the extraction of salt. Further studies and development led scientists to new discoveries, i.e. a passage with a length of 70 meters, a width of 6 to 20 meters and a height of up to 10 meters leading to a cave consisting of 10 contiguous rooms, the pillars of the walls of which were honed from salt. According to scientists, salt was sent from here to Western and Eastern countries by the Great Silk Road. Traces of fires, wooden wedges, shards of pottery and antlers, soot on the walls and some stone axes and hammers were found in one of them. Currently, some of the finds are stored at the Nakhchivan State History Museum and some at the museums of St. Petersburg and Tbilisi. They revealed that the salt mines were used already in the 3rd-2nd millennia BC, which makes the salt deposit on Duzdag the oldest in the world (4, 64). The Nakhchivan salt hospital functioning since 1979 successfully cures diseases such as bronchial asthma, chronic bronchitis, chronic pneumonia, allergies and many other diseases and this method of treatment is called "speleotherapy". Nature has created an ideal microclimate here: constant temperature, low humidity, zero radiation, plus the beneficial effect of chemical elements contained in rock salt. "Cave" therapy is complemented by conventional therapy. Silence is ideal here, which is probably why many patients combine treatments with creative work – you write and think in caves very well. And in the minute of rest you can play chess or checkers, or just walk around the light-flooded salt labyrinths. This place is often called "Duzlag" - salt mine. "Duzlag" is an entire underground city connected with long passages. Historic salt mines in Nakhchivan are the world's only mine, which has been working since the Middle Ages without a break.

The depths of Absheron are rich in oil and gas deposits. The surface of the peninsula abounds in limestone and bleaching clays. The northern part of Absheron is covered with cones of mud volcanoes and salt lakes - Boyuk Shor, Bulbul, Masazir and others (6, 64).

The Absheron Peninsula is an arid region, but at the same time, a real land of lakes. There are about 200 of them here. And each of them is a kind of treasure trove



of natural resources.

One of the largest salt lakes in Absheron is the Lake Masazir with an area of 10 square kilometers. It is situated near a village with the same name. Iodide-bromine salts, which are used not only as food, but also for medicinal purposes, have been produced since ancient times here.

An important incentive for Baku to grow as a city was oil, salt and cultivation of saffron that was exported to various countries of the East. According Sara Ashurbeyli, "The History of Albanians" (7th century) says that on its territory, along the banks of the Kura River, plenty of agricultural products are made. Fields abound with bread and wine, oil and salt, silk and cotton..." (6, 65).

The extraction of table salt was carried out in three ways: breaking rock salt, evaporation from seawater and groundwater brine. Salt deposits were strenuously explored and developed. The earliest information about rock salt extraction belongs to the 5th century BC (18, 13).

Transportation of salt



Initially, salt production had a domestic and primitive nature, and later they began to build “salt plants”. The technique of producing salt was very simple. During the evaporation of brines on slow heat, gypsum and other impurities first settled at the bottom and were removed. That is why boiled salt has always been, and is, cleaner than the initial brine.

In the monograph “Antique Caucasian Albania”, K. Aliyev gives interesting reports by Strabo about Albanians, where “the state of trade develops with the development of crafts, and domestic and foreign trade expands”. Strabo writes: “The highest (mountain ridges) of the true Caucasus are the southernmost (neighboring) on Albania and (the territories of) the Colchis and the Heniochi. (People), like I said, that converge in Dioscuriada are living there; they converge mainly for (the purchase) of salt.” “The availability of markets in the ancient Caucasus suggests that salt continued to occupy an important place in trade. Strabo’s reports that “there are saltworks” at the Lake Matiana are very valuable (4, 122).

As mentioned above, after oil, the second extractive industry in Baku was salt mining. Travelers’ records are an important source of information on this.

The main source on this issue is information from traveler Kämpfer: “Salt mines were in the northern part of Absheron... It was a lake, quite long and rounded,

Khojahasan, almost one parsang¹ in perimeter, surrounded by four small villages inhabited by (common people from shepherds), herders and those who engaged in procuring salt. This pond produced a huge amount of very white (shining) salt ... Thanks to hot sunny days, fresh water evaporates quickly, juice aggravated by salt remains, which thickens (hardens) in snow-white plates (layers), goes to the bottom and settles there. The salt is scraped off the bottom with a wooden mixer and then scooped with a shovel, it is loaded on wagons, on which it is taken out” (12, 93). “The amount of the extracted salt of Absheron was quite significant. For the next batch on carts, there were 40 piles here; if color did not interfere, they (piles) would reproduce (look like) a village as they had the shape and size of such buildings. A pile can be collected on separate days in summer in one day and in winter - almost half, because then, due to the abundance of moisture, salt is less compacted.” “Brought to the western shore of the lake, the salt was ferried to the Baku harbor on two-wheeled carts and on the backs of camels to be sent abroad by sea or provinces.” All this suggests that Baku salt was one of the products of domestic and foreign trade (12, 94).

In connection with the development of domestic and foreign trade, a revival of urban life was observed.

¹ Parsang is a measurement of length from 5 to 7 km

For example, merchants from the country of Khazars, Russia, Iran, Byzantium and far Eastern countries - India, China, Iran, Syria came to Derbent, Shamakhi and Baku and in exchange for their goods such as honey, wax, furs, spices, etc., they exported oil, salt, fish, saffron, madder, and other goods on caravans (6, 65). Salt mines in Absheron were taxed and were the property of both the state and individual feudal lords.

V. N. Leviatov covers the major centers of craft production in the Azerbaijani khanates of the 18th century, centers that were famous for the quality and quantity of their industrial products. These centers brought together the best masters of handicraft production, who had skills and knowledge of the business (20, 52). "The Nakhchivan khanate was known for its salt mines most of all." "The Baku khanate was known for oil, salt and saffron. Baku salt was transported to nearby khanates and delivered to the southern shore of the Caspian Sea." (20, 55)

Salt production is a very labor-intensive process, begins with the first warm day and lasts all the hot season. It should be noted that salt production in Azerbaijan was one of the domestic types of production, where

all the processes of labor were carried out by hand. Salt was scraped off the lake bottom with a wooden poker, scooped with a shovel, and then loaded onto carts and transported to the western shore of the lake where it was cut into cubes of certain size. When put in a heap, salt was rammed with a mallet and left to dry in the sun. In summer they produced 1 cube of salt and in winter, almost half because of the abundance of moisture. From here it was taken to Baku and other cities on carts and camels. From Baku, salt was transported by sea to Russia via Astrakhan, Iran and other countries (6,233). In 1770, a pood of salt was sold for 7 kopecks. In 1796, the fee for the export of salt was 5 rubles for one cart (wagon), and from a pack donkey (halvar), horse or bull - 1 ruble and 60 kopecks in the khan's money (6, 235).

Interesting facts are available in the Yearbook 1907 printed in Baku under the title "Industry and Trade of Baku and Its Districts": "Salt production from the Absheron Peninsula in 1904 - 66 salt lakes belonging to the treasury operated, divided into eight leases, of which just 359,500 poods of salt were produced." These were:

1) Zig site - 6 lakes: Atashi Shor A., Atashi Shor B., Zig Shor with the other three lakes.

Salt lake Masazyr



II) Kurdakhani site - 25 lakes: Kurdakhani; Binagadi; Haji-Asan; Digah; Fatmayi; Zira; Kilazi (part); Bulbuli; Muhammadli; Aruskush; Pirshagi; Surakhani; Aji-Bulag; Kumur-Oman; Shirin-Naur; Araba-Duzyan; Ot-Batan; Kizil-Naur; Batag; Kham-Khash; Ali-Shor; Girda Shor; Duz Dag; Pirgi Naur; Kal-Bali.

III) Masazir saline site - 4 lakes. Masazir; Dai-Shor; Kayuli-Batan; Nor-Yeri;

IV) Jeyran Batan site - 1 lake Jeyran Batan

V) Gala saline site - 1 lake Gala

VI) Bugian saline plot - 1 lake

VII) Kobi saline site - 12 lakes: Naft-Chala; Kabi-Chanag; Kamas-Chala; Kauduli; Bostanasi-Chala; Mashim-(Bashtami); Kirlig-Chala; Nabach (Uch-Mazar); Kabi; Talagi (Mahmud Chola); Ovzali; Ovchi; and other small lakes.

VII) Alikhanchala site - 13 lakes: Alikhan-Chala; Bugian; Boyuk-Chala; Dashti-Chala; Otag-Chala; Kichik-Chala; Isgandar-Chala; Kisha-Chala; Eke-Chala; Nefti-Chala; Atag-Chala; Sakhsi-Chala; Toza-Chal (24, 67)

Files of the Caucasian Archaeological Commission contain interesting information: "The oil and salt of Baku could also have a large income in Baku if merchants are banned from taking them from the island of Telekana (Cheleken) near the Trukhmen Ridge; to oversee them it is necessary to have a boat there" (1, 351). "Salt, oil and commerce constitute Baku revenues and the entire turnover of income produced by the sea. Hitherto, this turnover was quite simple, anyone arriving at the drilling barge buys as much salt, oil or goods as they

need and goes immediately without delay, and the khan has always tried to welcome such visitors finding his benefit from them" (2, 748). Russian merchants who delivered food on ships from Astrakhan to Baku loaded oil and salt in Baku and headed for the Persian ports. They saw a great benefit for the treasury from this, because such a notable amount of oil and salt could go on sale" (2, 748). A report from Major-General M. Guryev to Count Gudovich dated 7 March 1808 No 118 in Baku says: "Salt of two varieties. There was no Kothic salt last summer, which is used only by residents to make sacks for carrying oil" (3, 357).

The development of crafts and trade in Baku in the 19th century became even took on an ever larger scale. "Furs, leather, iron and Baku's own goods (oil, salt and saffron) were exported from Baku to Iran. In 1829, 96,000 poods of salt worth 162,000 silver rubles were exported to Iran. Salt worth 10,000 rubles was sent from Baku to Sheki. Only Baku salt was used at the Salyan fisheries" (23, 8).

"The export of Baku's own goods to the cities and provinces of the Transcaucasia was very important for the sale of Baku goods. These areas had especially great demand for Baku oil and salt. For example, 159.3 poods of Baku salt were sold in Baku District in 1848, in Lankaran – 118 and in Shamakhi - 6.8" (23, 13).

Large amounts of salt for industrial purposes were annually sent to Salyan fisheries (23, 9).

Travelers who visited Baku in the Middle Ages (Cornelis de Bruijn, Iacob-Johann Lerche, etc.) admired

Salt lake Masazyr



Salt mountain

its grandeur and beauty, the convenience of the port part of the coast of the Caspian Sea, high-quality white and black oil, and salt and saffron production (5, 37). "A decree issued in 1711 by Shah Sultan Huseyn shows that the oil wells and salt mines of Baku were rented (5, 34). During this period, oil, salt and saffron were major trade goods on the market in Baku" (5, 36).

In the era of imperialism, Baku produced lake salts from Zig, Masazir, Kurdakhani, Jeyranbatan and other salt lakes. Salt production involved 80-100 workers, and in the early 20th century, about 400 poods of salt were produced from all lakes. And in 1909, a mill for grinding salt was opened, which employed 30 workers (16, 30).

Azerbaijan produced both table salt from lakes and rock salt. Lake salt was produced in Baku District and rock salt - in Nakhchivan. In the early 20th century, 700,000-800,000 poods of table salt were produced annually on average and in some years – from 900,000 to 1 million poods (16, 47).

All salt extracted in the Baku oil fields was sold at the place of its production and exported mainly on camels for local consumption. A small amount of Baku salt was dispatched to Yelizavetpol province by the Transcaucasian railway. The salt of Jevat lakes was bought by local fishermen exclusively for the needs of their fisheries. Nakhchivan salt was sold at the fisheries themselves and in Nakhchivan, Sharur-Daralagoz and Zangazur districts. A small amount of Nakhchivan salt was sent to Tiflis. The price of Baku salt initially reached 10-14 kopecks per pood. Later it fell to 6-8 kopecks per pood. Nakhchivan salt cost: small - 5 kopecks and large - 10 kopecks per pood. With an average price of 10 kopecks per pood, the total amount of salt produced annually in Azerbaijan was worth 60,000-80,000 rubles (16, 51).

The salt mines used a large number of day laborers and cart-horses. On average, up to 300 workers were

Inside a salt mine



employed at the salt fields of Azerbaijan, and even more in 1902-1903 - 450-600 (16, 51).

In 1934, Soviet scientist I.V. Gavrilov, who researched the Masazir Lake, wrote that it contained 381,000 tons of salt. And in 1924, exploring the salt reserves of Azerbaijan, Chingiz Ildirim wrote in his reports that 249 tons of salt could be extracted from the Masazir Lake.

Salt lakes attracted people's attention not only because of the salt as a food product, which is essential. Saline lakes have amazing natural properties. Salt concentration in the most saline lakes: Senegal - 380 grams of salt per 1 liter of water and Koyashskoye and Saki Lake - 350 grams of salt per 1 liter of water. These indicators are higher than in the Dead Sea. Since salinity is very high, they are not inhabited by fish and other organisms that traditionally inhabit lakes. Instead, these lakes are inhabited by the microorganism *Dunaliella salina* – microscopic unicellular mobile algae. Its cells contain a red pigment called beta - carotene, and this algae, absorbing sunlight, emits a reddish pigment that paints the lake pink and reddish. These lakes are usually called color Flamingo Lakes. This phenomenon is characteristic of the Masazir Lake.

A salt lake is so shallow and salty that no animals can exist here. By late summer, the lake shrinks in size significantly, revealing bluish-black silt. During the day, the lake became so hot that it does not have time to cool down during the night.

Masazir and other "related" lakes are often compared with the famous Dead Sea. For their healing properties, they are not behind the Israeli miracle. It is quite possible that in the future, when it is possible to solve environmental problems, an international resort will

appear here. But these places still attract with their unique beauty and even certain mysticism, and it is not in vain that our lakes are an object of creative pilgrimage for photographers and a curious point in the itinerary of tourists visiting the country.

They come here to admire the amazing purple sunset and the glitter of salt "icebergs", enjoy the silence and watch the usual salt extraction process, which is so exciting for the city dweller.

The film of Azerbaijani director Fariz Ahmadov "Inheritance", which was awarded the third prize of the St. Anne's festival of debut films, was shot on the Masazir Lake. "Inheritance" is a film about ninth-grade pupil Ali, who has worked on the salt lake since childhood. If earlier he just watched his father, after growing up, he does almost all the work. Ali is one of the many young people living in the village of Masazir who do not think about what they will be when they grow up and how they will be making a living. The reason is the Salt Lake, an "inheritance", passing from generation to generation. Someone inherits a house, someone inherits car and someone - a whole lake and his fate together with it. This film is about a tradition that subordinates and keeps you afloat. The Salt Lake is the main metaphor of the movie: it feeds and drowns the main character. And it is not clear what to choose: serving the inheritance or your own way. In October 2010, the film "Inheritance" received a diploma from the VGIK Film Festival; in December – a second prize and a cash prize from Zubroffka International Film Festival in Poland.

Getting salt from water is a traditional trade or traditional business. Masazir is still the "breadwinner" for a large number of locals and a "supplier" of choice table

salt. Many salt deposits or salt enterprises still produce salt using the sun and the wind. The ground pool or lake evaporates under the influence of the sun and the wind. As soon as the sparkling white cover appears, workers come. They pile salt in beds with wooden spades, and then in clusters - dozens of white pyramids. The salt is loaded on a specially equipped carts working with the help of cartage and delivered to vehicles for further processing and transportation.

Masazir is currently the only lake in Absheron that still produces salt. The need for cooking salt is met by the products of the salt deposit by 50%. On other lakes such as Boyuk Shor, production was suspended in 1956 due to the active development of oil production. But in the period from 1931 to 1944, Boyuk Shor gave an average of 30,000 tons of salt. The salt lakes of Garadag district of Baku and Salyan and Neftchala districts provide 150 tons of salt a day.

In 2002, a law was passed "On mandatory iodization of salt". And in 2003, a ban was imposed on the import of non-iodized salt into Azerbaijan (14, 12).

In July 2011, a plant was launched to produce salt based on new technology on the Masazir Lake, which is why the lake was closed from all sides. As for the salt lake in Garadag, we must say that it is completely covered with earth and dried up (13, 6). ✪

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Inside a salt mine

