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Resumo

A maior parte do sal, chegado nos séculos XVII e XVIII à Rússia (via mares Branco e Báltico), era designado por "espanhol". Só nalguns casos é que o sal de Setúbal é mencionado. Mas, podemos supor que, pelo menos parte deste sal "espanhol" ("Spanka" nas fontes russas) vinha de Portugal. O sal "espanhol" era conhecido pela sua qualidade e era usado para preparar o peixe da corte do Czar. Os especialistas holandeses na preparação de peixe, convidados pelo governo russo nos séculos XVIII e XIX, pediram sal "espanhol". Sabemos que se tratava precisamente do sal de "St. Ubes" ou Setúbal. As experiências na salga de peixe, feitas em 1902, quando a expedição científica russa convidou os salgadores de peixe holandeses, que usaram sal português, é um bom exemplo daquele tipo.

The majority of salt, delivered in the 17th and 18th centuries to Russia (via White and Baltic Seas) was recorded as the "Spanish" one. Only in several cases Setúbal salt is mencioned. But we may suppose that at least a part of this "Spanish" salt ("Spanka" on the Russian sources) was from Portugal. The "Spanish" salt was known for its quality, and it was used for the preparing of the fish for the Tsar's court. The Dutch experts in the fish-preparing, invited by the Russian government in 18th and 19th centuries, demanded to provide them with the "Spanish" / St. Ubes salt (Setúbal's salt). The experiments on fish salting made in 1902, when the Russian scientific expedition invited the Dutch fish salters, who used the Portuguese salt, is a good example of such a kind.

Information on the importation of salt is scarce in Russian historical documents. Russia had its own salt-production industry since ancient times. The important coincidence is that the main Russian salt-producing regions, north and north-west Russia, were at the same time the main regions of the import trade. We do know, however, that some quantities of foreign salt were imported into Russia as early as the 17th century. There were two main trade routes by which commodities were imported into Russia – the Baltic and the Northern. The Baltic route for importing salt is known since the 17th century. It passed through Nyenskans (the Swedish town at the mouth of the Neva, where the city of St. Petersburg is situated now). In the early 18th century Nyenskans was destroyed, and St. Petersburg became the main Russian Baltic port.

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There was another important trade route between European ports and Archangel, situated on the White Sea in the North of Russia.

The earliest data on the wide-range importation of salt concerns the Baltic route (Table 1).

Year	Spanish salt	French salt
1641	47	20
1642	99	0

Table 1: The Baltic import of Salt into Russia in 1641 and 1642 (metric tons)1.

As we can see, documents mention two kinds of imported salt – French and Spanish. Salt importation was not a large trade, even at the scale of that period, but the fact that it existed at all, reveals that foreign salt had its own specific place on the Russian market. Most probably the low quality of the Russian salt, boiled out from underground brines or the sea water, and its unsuitability for salting fish were the main reasons why it had to be imported. For example, we know that the supplies stored for the Tsar's use were mainly salted using salt recorded as "Spanish" (Shpanka in the Russian documents). In 1767 the official sent to Pustozersk, a town on the lower Pechora river, to deliver salmon, which was regarded as one of the best in Russia, and deer's tongues for Empress's use, brought with him about 50 kg of salt recorded as "Spanish"<sup>2</sup>.

At the same time it is reasonable to suppose that at least some of the *Shpanka* was originated from Portugal. We have managed to find documents in which the Portuguese salt is directly referred to as *Shpanka*. In the early 18th century a State Salt monopoly was proclaimed in Russia, and all the operations concerning salt importation were concentrated in the hands of the General Salt Office, situated in St. Petersburg.

The earliest known centralized purchase of the "Spanish" (i.e. Portuguese) salt in Russia is connected with the attempts of the Russian government to improve the fisheries situation and the preparation of fish and meat products, as well as to encourage trade in the Russian North in the mid 18th century. In 1758 the Senate issued an edict on meat salting in northern Russia. This document proclaimed that all the meat sent from the region had to be salted with foreign salt, namely French and "Spanish" (Shpanka)<sup>3</sup>.

But the most important growth of delivery of foreign salt (including that from Portugal) into Russia was connected with the government program to approve Russian herring fisheries in the White Sea. The main aim of the program was to organize in northern Russia the production of the salted herring, prepared according to the Dutch method. The government declared that this was how the crisis in the north would be tackled, and the cities of the Empire then be provided with cheap, high quality fish. The problem was that herring salted according to the Russian method, using the cheap, dirty Russian salt, boiled out from the White Sea water, was of a low quality and could not be kept for a significant time without acquiring a strong, specific smell.

In 1765 all the White Sea herring fisheries were leased to the merchants Makarov and Pribytkov<sup>4</sup>. Research was first undertaken by the Russian intelligence service to determine the secret of the superior quality of the Dutch herring. In the report sent by the Russian spy

 $<sup>1\,</sup>Shaskolsky\,I.\,P.\,Russkaya\,morskaya\,torgovlya\,na\,Baltike\,v\,17\,v\,[Russian\,Baltic\,Sea\,trade\,in\,the\,17th\,century].\,St.\,Petersburg:\,Nauka\,Press,\,1994.\,P.\,167-168.$ 

<sup>2</sup> State Archives of the Arkhangelsk Region (GAAO). F. 1. Op. 1. D. 7330. L. 1 – 1 back.

<sup>3</sup> GAAO. F. 1 Op. 1. D. 6502 a. L. 2.

it was stated that the quality of the Dutch salted herring was connected with the quality of the Portuguese salt, which has to be especially perfected and used for preparing the fish<sup>5</sup>. There was an instruction, translated into Russian, strictly prohibiting the use of any salt other than Portuguese salt (French for example) for preparing herring<sup>6</sup>.

After that, a stock of Spanish and French salt was created in Archangel. In 1766, the Russian representative in Holland reported that a ship left Amsterdam for Archangel with "Spanish" salt on board. Another document states that this consignment of salt includes 200 barrels of Lisbon salt and 200 barrels of St. Ubes salt<sup>7</sup> (Setúbal's salt). In that year, approximately 5700 poods<sup>8</sup> (about 93 metric tons) of foreign salt, mainly "Spanish" (i.e. Portuguese), was spent<sup>9</sup>.

Vassiliy Krestinin, a well-informed contemporary observer, especially underlined the importance of using of pure St. Ubes salt as the main way of preparing good herring<sup>10</sup>. The salted herring was sent to St. Petersburg and Moscow and was successfully sold. A expertise was organized in the Commerce Collegium (the Ministry of Commerce) to prove the quality of the herring produced, and in the protocol it was stated that the fish was found to be excellent. The Portuguese salt had been proved to be the main cause of the high quality of the Dutch herring<sup>11</sup>.

At the same time the government organized an experiment, using salt from lletsk, the newly opened salt mines in the Southern Urals. This salt had to be compared with the Portuquese, and was expected to be better<sup>12</sup>. This was an important political moment in that period. The young Empire was full of ambitions to overtake the leaders in every area – for example, Holland in herring preparation or Portugal in salt-production.

When the government experiment on approving the preparation of herring ended without any long-lasting success, the consumption of foreign salt in the northern Russia decreased. The Russian buyers preferred to purchase the output of the local salt-boiling industry, which was cheaper. In June 1775, more than 11000 poods (about 180 tons) of "Spanish" salt were kept in the Archangel storehouses, but consumption was at the rate of 40 poods (about 650 kg) per month. At the same time the fishermen bought 8326 poods (about 136 tons) of the local Russian salt.

In the 19th century most of the salt for the Russian Barents Sea fisheries was brought from England (Liverpool salt), either directly or through Norway. However, the bad salting of fish in the northern Russia remained a big problem even in the early 20th century. Salted cod, haddock and herring were cheap products, mostly for the local consumption. They were prepared carelessly and were salted with insufficient salt, or even with the cheap, poor quality salt. This procedure of salting transformed the good fresh fish into a really poor quality product, with a highly specific strong smelt. Its price was low as well. Now it is evident that the main reason for that was the market situation, which demanded cheap sea fish for the poor

<sup>4</sup>GAAO.F.1.Op.1.D.6499.L.2back.

<sup>5</sup> Ihid

<sup>6</sup> GAAO.F.1.Op.1.D.6499.L.30-31. 7 GAAO.F.1.Op.1.D.6907.L.82,83 back.

<sup>8 1</sup> Russian pood is equal to 16.38 kg

<sup>9</sup> GAAO. F. 1. Op. 1. D. 6502 a. L. 41.

<sup>10</sup> Krestinin V. V. Izvestie o rybiolovstve belomorskih seldei, sochinennoe v 1787 gode v gorode Arhangelskom [Information about the White Sea herring fisheries, written in 1787 in the town of Arkhangelsk] In Russkii Sever i Zapadnaya Evropa [The Russian North and the Western Europe]. St. Petersburg, 1999. P. 416-417

<sup>11</sup> GAAO.F. 1. Op. 1. D. 6500. L. 6. 12 GAAO. F. 1. Op. 1. D. 6499. L. 47.

inhabitants of the region, while there was plenty of freshwater fish of good quality, as well as herring imported from the Netherlands and Norway, for richer urban citizens.

At the very beginning of the 20th century, however, the philanthropic Committee for Assisting the Pomors (local inhabitants of the White Sea coasts), which was set up in the wake of public concern with the fate of local fishermen of the northern Russia, and the scientists of the Murman Scientific-Fishery Expedition financed by this committee, proposed that lack of knowledge was the reason for this situation. Taking the activities in other European countries as an example, they were eager to improve the local fisheries with the application of modern science and technology<sup>13</sup>.

In 1902 the head of the Expedition, zoologist Leonid Breitfuss, was sent to the Netherlands and Belgium to learn foreign methods of fish salting 14. After examining several methods in different places he found that the Dutch method was the best 15. Using his good contacts with the international scientific community in the fields of oceanography and fishery science, which merged in the same year to become the International Council for the Exploration of the Sea (ICES), Breitfuss asked the advice of the Dutch delegate on this Council Dr. P.P.C. Hoek. Hoek gave him a letter of recommendation to the fishmonger in Vlaardingen, H. Kikkert. There Breitfuss became acquainted with the procedure of cod salting, and noticed that cod salted with Portuguese salt "was distinguished by its whiteness, was not hard, and, as the most important, it did not have the smell so characteristic of our Russian cod" 16.

He therefore invited two Dutch specialists in cod salting from Vlaardingen to come to Murman (the Barents Sea coast of Russia, Kola peninsula) to teach the members of the Expedition all the details of the method<sup>17</sup>. In the Netherlands, Breitfuss had ordered oak barrels (capacity of about 120 kg) and the best quality coarse sea salt from St. Ubes<sup>18</sup>. The use of this salt as well as careful gutting and cleaning of the fish were the main secrets of the Dutch method of salting fish. During the summer of 1902 under the supervision of Dutch experts, Arie van der Hoeven and Jacob Schrenk<sup>19</sup>, the Expedition salted about seven metric tonnes of cod and haddock. The end product was very good. Salted fish was sent to several Russian cities and was immediately sold at good prices in the best shops. Scientists from the Murman expedition considered this a great success in their attempts to improve the northern fisheries, as they saw one of their tasks to make cod a popular product for a wider Russian population, which regarded it with suspicion.

Samples of salted fish were sent for analysis to Prof. von Prausnitz, Director of the Laboratory for the Analysis of Foodstuffs in Graz, Austria<sup>20</sup>. Comparisons of samples salted by different methods and various kinds of salt showed that the use of insufficient salt was the main

<sup>13</sup> See Lajus Ju. "Foreign Science in Russian Context": Murman Scientific-Fishery Expedition and Russian participation in early ICES activity. ICES Marine Science Symposia. 2002. V. 215: 64-72.

<sup>14</sup> Breitfuss L. L. Otchet L. L. Breitfussa o poezdke zagranitsu vesnoiu 1902 goda. *In* Ekspeditsiia dlia nauchnopromyslovykh issledovanii u beregov Murmana. Otchet o ee deiatelnosti za 1902 g. [Expedition for the scientificfishery research near the Murman coast. Report on its activity in 1902]. St. Petersburg, 1903. P. 46-51.

<sup>15</sup> Ibid. P. 48. 16 Ibid. P. 49.

<sup>17</sup> Breitfuss L.L. Uluchsnennyi posol ryby po gollandskomu sposobu [The improved salting of cod and haddock according to the Dutch method]. *In* Ekspeditisia dlia nauchno-promyslovykh issledovanii u beregov Murmana. Otchet o ee deiatelnosti za 1902 g. [Expedition for the scientific-fishery research near the Murman coast. Report on its activity in 1902]. St. Petersburg, 1903. P. 229-235. 18 lbid. P. 219.

<sup>19</sup> lbid. P. 219.

<sup>20</sup> Breitfuss L. L. Ekspeditsiia nauchno-promyslovykh issledovanii u beregov Murmana. Otchet o ee rabotakh v 1903 godu. [Expedition for the scientific-fishery research near the Murman coast. Report on its activity in 1903]. St. Petersburg, 1906. P. XLV-LV.

reason for the bad product made by the Russian fishermen. However, the Dutch way of salting with St. Ubes salt provided not only a very fresh and tasty product, but also a product which contained the highest percentage of proteins. These data were published in the scientific report of the Expedition. Breitfuss also published a brochure for the wider public<sup>21</sup>.

After this successful experiment, the philanthropic Committee for helping local fishermen in the northern Russia decided to organize a commercial enterprise for salting fish. They gathered capital, rented a storehouse in the fishing station on the Barents Sea, and ordered barrels and Portuguese salt from the Netherlands. But, nothing came of it, as the scientists from the Expedition did not want to supervise this enterprise, and the Committee could not find a suitable person, whom the Committee could trust, interested in developing it.

After the Revolution of 1917, interest was lost in the issue of improving fish salting, as salted fish was again considered as a cheap product of poor quality, especially in the conditions of the food shortages of the 1920s and 1930s. From the mid-1930s the development of refrigeration technology helped to turn the market to the frozen fish.

From this brief review we can see that all the attempts to improve fish salting in Russia, attempted from time to time in connection with the ideas for modernizing the northern Russian fisheries, were stimulated by the interest in foreign methods of salting and in the Portuguese / St. Ubes salt which was renowned as the best for this purpose. In spite of the fact that these attempts never had any real lasting success, their history is an interesting illustration within the framework of the general history of Russia's attempts both to modernize and to borrow foreign technologies.

<sup>21</sup> Breitfuss L. L. Uluchshennyi posol treski i pikshi po gollandskomu sposobu. [The improved salting of cod and haddock according to the Dutch method]. St. Petersburg, 1906.