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## The development of sericulture and the production of silk in Croatia

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During the second half of the 18th century the Court in Vienna gave special support to one specific economic branch of the Croatian Kingdom: sericulture. According to mercantilist views of that time, the production of raw silk was a significant way of combining inexpensive production with expensive sale of raw silk in order to make large profits and improve the balance of trade. Sericulture in a way represented the most suitable and optimum combination of the Frontier's military and agricultural obligations on the one hand and high economic politics of the Monarchy on the other. Due to this, sericulture is also a specific phenomenon in the Military Frontier as regards initiating economic growth since silk wasn't manufactured for domestic purposes of the Frontier's inhabitants but was exported to other parts of the Monarchy.

Among the economic branches of the Croatian Kingdom that had special support of the Court in Vienna sericulture had a singular position. This economic branch encompassed the rearing of the silkworms, reeling the silk cocoons into raw silk and, to a lesser degree, the further processing of raw silk into thread or yarn<sup>1</sup>. The production of raw silk according to the mercantilist circles was a significant way in which to utilize inexpensive production and expensive sales of raw silk to make a profit and improve the balance of trade<sup>2</sup>. Taking into account the close connectedness of economic solutions of cameralism of the Maria Theresa time with the organisation of the Croatian Military Frontier it is not surprising that The Court in Vienna chose exactly this location to conduct this economic experiment with silk. Sericulture in a way represented the most suitable and optimum combination of the Frontier's military and agricultural obligations on the one hand and high economic politics of the Monarchy on the other. Due to this, sericulture is also a specific phenomenon in the Military

<sup>1</sup> Igor Karaman, *Privredni život Banske Hrvatske (The Economic Life of Civil Croatia) (Zagreb, 1989), p. 117.*

<sup>2</sup> *According to the cameralists the stimulation of agriculture, craftsmanship, and especially trade, improved the circulation of money, which in turn initiated the expansion of other economic activities and heightened employment. The State as an integral economic unit had to intensify economic activity and production in order to enable export and prevent import, in this way creating an active and not passive balance of trade. The emphasised concern of cameralism for State finances and tax policies directly influenced the position of the Court circles in Vienna regarding the Croatian Kingdom. Cameralism represented in a political sense the Trojan horse of Viennese centralism. Under its wing the centralistic hoop was tightened around the Croatian political factors. Compare Ivan Vrančić, "Dr. Adalbert Barić i političko-kameralni studij u Varaždinu i Zagrebu 1769.-1776." (Dr. Adalbert Barić and the political-cameralist studies in Varaždin and Zagreb 1769-1776", in: Ivan Vrančić editor, Prilozi za povijest ekonomske misli na tlu Jugoslavije od 15.-20. stoljeća (Contributions to the history of economic thought in Yugoslavia from the 15<sup>th</sup> to the 20<sup>th</sup> Century) (Zagreb, 1984), pp. 106, 107.*

Frontier as regards initiating economic growth since silk wasn't manufactured for domestic purposes of the Frontier's inhabitants but was exported to other parts of the Monarchy. The Commander of the Slavonian Frontier artillery general Mercy d'Argenteau was the first to introduce sericulture in the Frontier<sup>3</sup>. The breeding of silkworms was introduced in 1761 in the Slavonian Frontier, three years later in the Varaždin Frontier and between 1772 and 1774 in the Banal Frontier<sup>4</sup>.

However, sericulture was not introduced exclusively in the Military Frontier. Queen Maria Theresa in her patent of 1763 invited all landlords, administrations, monasteries and municipalities in other lands of the Monarchy to grow White Mulberries. Twenty years later the production of silk cocoons in Civil Croatia and the Military Frontier reached a total of 76,551 Viennese pounds. Of this quantity 55% (42,400) was produced in the Military Frontier, and the other 45% (34,151) in the remaining parts of Croatia and Slavonia. The best rearing of silkworms was achieved in the civilian and military parts of Syrmium followed by Slavonia in general (69%). The production in the Slavonian Frontier in 1783 totalled 23,669 Viennese pounds. The Counties of Syrmium and Virovitica were then producing 13,247 and 12,155 Viennese pounds respectively. In the first half of the 19<sup>th</sup> Century sericulture was spreading in the Zagreb and Varaždin Counties as well as in Lika. Simultaneously in the regions having an even older sericulture tradition the production of silk cocoons increased. I have already pointed out that Slavonia was at the forefront of silk cocoon production. However, while the production remained less developed in other parts of Croatia it had a leading role in the Varaždin Frontier especially in the regions of Bjelovar and Križevci. In 1808 the Croatian Frontier manufactured a total of 51,748 Viennese pounds (38,898 of which were produced in the Varaždin Frontier), in other words 2.8 times more than twenty years earlier<sup>5</sup>. In the same year the total production in the Military Frontier grew to 130,309 Viennese pounds, which was as much as three times more than in 1783. In 1840 the total production of silk cocoons equalled 336,977 Viennese pounds. The Military Frontier held the lead with 64% (215,400) of the production while Civil Croatia produced the other 36% (121,577)<sup>6</sup>. Silk production was under military control until the end of October 1800. The control was transferred to the Hungarian Court Chamber<sup>7</sup>. However, before the Chamber authorities could takeover the control on sericulture the highest military authorities once again declared: "Sericulture is an especially useful branch of manufacture for the Frontiersmen since it requires only short-term efforts and insignificant costs, but yields considerable financial gain"<sup>8</sup>. The production process and further processing of raw silk were not as simple as the Viennese military circles tried to present and consisted of several consecutive phases. The first phase was the rearing of silkworms, the second reeling cocoons in reeling or silk factories, and the third phase consisted of twisting and spinning in filatures (filatorium).

<sup>3</sup> Anton Mercy d'Argenteau (died 1767) fought against the Turks and was awarded the rank of lieutenant-marshal in 1741. After taking part in the Austrian Succession war he becomes artillery general in 1753 and the Court War Council appoints him Supreme Commander of the Slavonian Military Frontier. He held this position until he died in Osijek. Constant Wurzbach, Biographisches Lexikon des Kaiserthums Österreich, 17. (Vienna, 1867.), pp. 393, 394.

<sup>4</sup> Mathias Stopfer, Lehrbuch über die Statistik der Militär-Grenze des österreichischen Kaiserthums (Graz, 1840.), p. 108.

<sup>5</sup> Rudolf Bičanić, Doba manufakture u Hrvatskoj i Slavoniji (1750-1860) (The era of manufacture in Croatia and Slavonia) 1750-1860)(Zagreb, 1951.), pp. 147, 148.

<sup>6</sup> Idem, p. 148.

<sup>7</sup> The Croatian State Archives in Zagreb (HDA); 429th Banal General Command in Zagreb; box 9; marked 1800-21-119, Systemal-Verordnung 17. 9. 1800.

<sup>8</sup> "Die Seidenkultur ist eine den Gränitzern ganz besonders nützlicher Industrial-Zweig, nachdem si ihnen nur eine ganz kurze Zeit einige Mühe und sehr unbedeutende Ausgaben verursacht, ihnen aber doch beträchtliche Geldzuflüsse verschaffet.": HDA; 430th Slavonian General Command; box 37.; marked 1799-10-1, Hofkriegsrätliche Verordnung 31. 1. 1799.

Frontier households of the military part of Croatia and serf households in the civilian part were responsible for the careful and continuous rearing and feeding of silkworms. The entire metamorphosis process from larvae into cocoons could succeed only in an environment of constant temperature which meant that the rooms in which the larvae were located had to be heated to maintain even temperatures. It was calculated that it took 5 to 6 weeks to rear the silkworm and that children or elder people could manage this task, which meant that the agricultural work did not suffer nor were major investments necessary, and the authorities considered the profit a sure thing<sup>9</sup>. The Frontiersmen were given the silkworm eggs from State authorities and fed them Mulberry tree leaves. One Lot of eggs at the end of the production process yielded three pounds of pure silk and as Stopfer pointed out in explaining the desire of the military as well as the highest level of State authority for supporting sericulture in the Frontier "one pound of silk saved ten guilders for the Austrian Monarchy, which would otherwise have to be sent abroad for the purchase of this commodity."<sup>10</sup>

For the successful cultivation of the silkworm special conditions were also necessary since they were very sensitive to changes in the climate. Sometimes even ten years were needed to cultivate the trees to satisfy the quantity of leaves necessary for feeding the silkworms. During the seventies the military authorities sent several Frontiersmen to Osijek to learn everything about planting Mulberry trees and they also issued numerous commands regarding the planting of Mulberry trees and supporting this natural resource, they even sent girls to this town in Slavonia to learn the craft of silk spinning<sup>11</sup>. In 1808 the Karlovac-Varaždin General Command approved the construction of a new Mulberry tree plantation in Bjelovar with 7 Fl. and 58 Kr. in cash and 1,111 manual and 261 vehicle labourers<sup>12</sup>. It is significant that the number of trees in the Croatian Military Frontier increased in the period from 1804 - 1837 from 268,884 trees to 501,188. The trees had to be planted along the roads, streets, in private and municipal gardens. Archduke Ludwig even suggested a reward for borderer households in the Varaždin Frontier with the best cultivation rates consisting of twelve cauldrons that would enable them to reel the silk cocoons themselves<sup>13</sup>.

On the basis of information on the silkworm production Bićanić concluded that 13,000 households in the Civilian and Military Croatia were involved in this endeavour<sup>14</sup>. The value of cocoon production in the 1840's totalled between 150,000 and 200,000 Forint. The profit for the serf and borderer households from this production was small and uncertain. This was a very sensitive and risky production and in unfavourable seasons it could fall beneath half the average annual yield. Although production did not require hard physical labour it did demand watchful and continuous care. In 1854 the economic papers described this work in the

<sup>9</sup> *Mathias Stopfer, Lehrbuch über die Militär-Gränz-Verwaltung des österreichischen Kaiserthums (Graz, 1841.), p. 291.*

<sup>10</sup> "und mit jedem Pfund Seide zehn Gulden für die österreichische Monarchie in Ersparung kommen, welche widrigen Falls für diesen Artikel in das Ausland gesendet werden müßten": *Idem, p. 293.*

<sup>11</sup> *HDA; 426th Joint Banat-Varaždin-Karlovac Military General Command; book 47, Repertorium 1771 - book 49, Repertorium 1772 - book 55, Register 1773.*

<sup>12</sup> *Historical Archive Bjelovar (HAB); Town Hall Bjelovar 8JUa-1 (GPB); no. I-2, Exhibitions-Protocol 1808.*

<sup>13</sup> *HDA; 426; box 21a; marked 1808-1-208 B-4519, Bericht von Erzherzog Ludwig, 2. 12. 1807. Ludwig Joseph Anton von Habsburg (1784-1864) was educated by his 16 year older brother Emperor Francis II (I), who influenced him to chose a military career. At the age of 17 he becomes a colonel. His experience in the Court War Council from the start of the 19<sup>th</sup> Century is related mostly to the Military Frontier He headed the Frontier Reorganisation Committee and toured the Region as a General Supervisor. Since 1807 a lieutenant-marshal at the beginning of the Fifth coalition war he is charged with the command of the 5<sup>th</sup> military corps. After the defeat at Abendberg he resigned his position and dedicated himself to physics and mathematics. In 1815/16 he travels to France and Great Britain with his brother Johann where they visited several factory plants and were personally convinced of the irrepressibility of industrial progress. In 1818 he is promoted to the rank of marshal, and from 1819 to 1849 he is appointed general artillery director and a member of the State Council. Wurzbach, 6 (Vienna, 1860), pp. 447-449.*

<sup>14</sup> *Bićanić, p. 148.*

following way: "The master of the house must vacate his only residence - be it his bedroom or any other room - and cede it to the silkworms during rearing, and must live and sleep along with the rest of his household in other farm-buildings while the beds, tables, benches and doors must be brought into the bedroom and used as support in feeding the silkworms."<sup>15</sup> For all this effort and inconvenience the earnings per household were barely 20 kr. a day.

The second phase of silk production was conducted in silk factories. This is where cocoons still containing live larvae were bought and further processed. There were a total of 17 silk and reeling factories in the Military Frontier (*Seiden-Galetten Spinn- und Einlösstationen*)<sup>16</sup>. By the end of the 18th Century Petrinja, Senj and Bjelovar had their own spinning mills (*Seidenspinnereien*) or buy-off stations (*Einlösungs-Stationen*) where cocoons were reeled for further production. The spinning mill in Senj was shut down in the beginning of the 19th Century, while the ones in Petrinja and especially Senj are mentioned by Demian, Hietzinger and Stopfer<sup>17</sup>. The purchasing of cocoons in Civilian Croatia and the Slavonian Frontier was conducted by silk inspectors (*Seiden Inspector*) of the Hungarian Court Chamber. The Chamber appointed one inspector per county who purchased cocoons through his commissioners. The person in charge of sericulture was the chief supervisor with offices in Osijek, the heart of sericulture. Each Frontier regiment also had its supervisor who was in charge of numerous employees in Mulberry tree nurseries, silk-factories, etc. Regiments organised the purchases in the Croatian Frontier until the control of sericulture was transferred from military to the Chamber in the late 1800's. In 1799 the Court War Council increased the value of one pound of first class cocoons from 32 to 40 kr., and second class cocoons from 10 to 20 kr.<sup>18</sup> A producer of silk cocoons could sell his cocoons to anyone who would buy them. The Hungarian Court Chamber no longer had a monopoly over the sales and had the obligation to buy cocoons from any manufacturer at a minimal fixed price. This caused great dissatisfaction in the Chamber that complained it paid too high a price in comparison to foreign markets. But at the same time, manufacturers also complained that the Chamber was paying too low a price. In 1812 the purchase of silkworms was leased to private entrepreneurs<sup>19</sup>. This made purchase prices higher. The Hungarian Court Chamber concluded a lease agreement in 1827 with Viennese privileged whole-salesmen Isaac Hoffmann and Lazar Goldschmidt (*k. k. Privilegierte Grosshändler*). They agreed to buy all the silk cocoons offered for sale in the counties and regiments at fixed prices approved by the authorities<sup>20</sup>.

The purchase and classification of cocoons remained under official supervision. In the Military Frontier a specially designated officer made sure that the Frontiersmen were not cheated in the process of weight, quality and price determination for their cocoons<sup>21</sup>. The manufacturers however still complained about low prices and a complicated buy-off method. Although the prices were not determined on a free market they nevertheless varied. This was due on the one side to the already mentioned sensitivity of production and on the other to the influence of circumstances on the world market. The authorities in Vienna attempted to prevent major price fluctuations by determining a fixed price value. But in doing this they nevertheless did not succeed in preventing the connectedness of domestic prices with the world market. The purchase price for cocoons in 1813 was 40 kr. for first class, 12 kr. for se-

<sup>15</sup> Quoted in Bičanić, p. 149.

<sup>16</sup> Österreichisches Staatsarchiv Wien (ÖStA); Kriegsarchiv (KA); Sonderbestand Militärgrenze (SM); box 34; konv. Lw; marked B1538-1820, Commissionsprotocoll 5. 5. 1817.

<sup>17</sup> Johann A. Demian, Statistische Beschreibung der Militär-Gränze, 1 (Vienna, 1806/7), p. 134, - Stopfer, Statistik, p. 109.

<sup>18</sup> HDA; 430; box 37; marked 1799-10-1, Hofkriegsrätliche Verordnung 31 January 1799.

<sup>19</sup> Stopfer, Statistik, pp. 108, 109.

<sup>20</sup> Bičanić, pp. 151, 152.

<sup>21</sup> Stopfer, Militär-Gränz-Verwaltung, p. 293.

cond class, in 1814 - 48 kr. for first class and 15 kr. for second class, in 1815 - 1 Fl. for first class and 20 kr. for second class, in 1816 - 1 Fl. 30 kr. for first class and 30 kr. for second class, in 1817 - 2 Fl. for first class and 36 kr. for second class<sup>22</sup>. During this period a pound of 4th class cocoons was worth in average 24 kr. and varied between 37 kr. (1836) and 18 kr. (1931). For one pond of silk only 10 pounds of first class cocoons were necessary or 13 pounds of fourth class cocoons<sup>23</sup>. The leaseholders Hoffmann and Goldschmidt invested significant capital during the first half of the 19<sup>th</sup> Century in sericulture development. They enhanced Mulberry tree cultures, renovated and expanded silk factories, introduced machinery and modernised the plants. The filature in Osijek was brought to an enviable technical level<sup>24</sup>.

The processing of silkworms in reeling factories was the second phase in silk production. Croatia had some ten reeling factories in the 1780's. In 1841 there were a total of 46. In Civil Croatia Osijek had 7, Križevci had 3, Đakovo, Virovitica, Varaždin and Koprivnica had two each, and Cernik, Irig, Trpinj and Zagreb had one each. In the Military Frontier there was one in Nova Gradiška, Oriovic, Podvinje, Morović, Golubinci, Stara Pazova, Zemun, Glina, Petrinja, Kostajnica, Đurđevac, Virje, Čazma and Garešnica, and two in Vinkovci, Mitrovica and Bjelovar<sup>25</sup>. The centres of these reeling factories were at the same time the centres of silk production. Spinning mills had big cauldrons for cooking and fumigating the larvae that had a capacity for 40 to 60 pounds of silk cocoons<sup>26</sup>. The reeling and processing of silk cocoons in spinning mills was categorised as seasonal work that lasted approximately 50 days in a year and could employ up to 3,500 people. The men cared for the cauldrons and heating, while the women took the cocoons out of the hot water and twisted raw silk thread and young women or children would turn the spindle<sup>27</sup>. Most of the spinning mills were State owned and leased to the aforementioned whole-salesmen Hoffmann and Goldschmidt for 4 and later 7 Fl. per cauldron per year<sup>28</sup>. The rearing of silkworms and reeling of silk cocoons was done mainly by women in the Military Frontier as an addition to other duties inside and outside of the house, especially during the times their husbands were involved in warfare.

In filatures (filatorium) raw silk was twisted and spun into thread and fine yarn<sup>29</sup>. However there was only one large filature in Osijek, which had two reels, five spinning machines, 164 spinning wheels and one big mill for power. Along side this filature there were two smaller ones in Požega and Vinkovci that produced pure processed silk. In 1845 approximately 200 women and 80 men worked in the Osijek filature. The filature then produced 42 cents of pure processed silk valued at 8,290 Fl. Most of the raw silk (90%) was exported out of Croatia chiefly to Lombardy. Croatian silk was sold on the most important European markets in Milan, London, Lyon and Krefeld under the name of Hungarian silk<sup>30</sup>. The Croatian silk was not of fine quality or lustre such as the French and Italian silk but it was stronger, heavier and longer lasting<sup>31</sup>.

<sup>22</sup> ÖStA; KA; SM; box 34; konv. Lw; marked B1538-1820, Commissionsprotocoll 5. 5. 1817.

<sup>23</sup> According to Demian in Petrinja for one pound of raw silk 13 pounds and 2 lots of silk cocoons were necessary. Bičanić states that 13 pounds of cocoons gave an average of one pound of raw silk. The price of one pound of silk cocoons, according to Bičanić, was between 20 and 40 kr, and according to Krajasich between 30 and 40 kr. Demian, *idem*, 1, p. 236. - Bičanić, *idem*, pp. 152, 458. - Peter Krajasich, *Die Militärgrenze in Kroatien (Vienna, 1974)*, p. 184.

<sup>24</sup> Bičanić, p. 151.

<sup>25</sup> *Idem*, p. 153.

<sup>26</sup> Krunoslav Tkalc, Babogredska kompanija (The Company in Babina Greda) (Županja, 1970), p. 67.

<sup>27</sup> Bičanić, pp. 153, 154.

<sup>28</sup> Stopfer, *Militär-Gränz-Verwaltung*, p. 292 - Bičanić, p. 153.

<sup>29</sup> *Filatorium* comes from the Latin word *filum*, which means thread, in weaving or yarning.

<sup>30</sup> Bičanić, p. 154.

<sup>31</sup> Stopfer, *Statistik*, p. 111.

Another significant centre of sericulture in Croatia was undoubtedly Bjelovar. Sericulture was the only larger production branch in Bjelovar apart from beer breweries. In 1785 the military authorities constructed a high, three-storey silk factory and reeling plant (*Seiden-Fabrik und Spinnerey*) in Bjelovar with 30 weaving machines and 36 workers - both men and women<sup>32</sup>. The factory produced 888 ells of different silk cloth per year. It produced among other types - various kinds of satin, faconned and plain gros de tour, black fabric for trousers, heavy and light Taffet in various colours, Parisian fabrics, large and medium Milan ribbons, black, white and stripped parchan, ribbons made of grosdetour, floret patterned silk. Thanks to large production of silk in the Slavonian, Varaždin and Banat Frontier's, the Bjelovar factory did not lack in raw material<sup>33</sup>. Between the years of 1765 and 1815 a total of 324,641 pounds 1 lot of silk was produced in the Hungarian-Croatian Kingdom, this gives an average of 6,365 pounds 161/3 lots per year<sup>34</sup>.

The military authority conferred the highest level of supervision over the Bjelovar silk factory to lieutenant colonel Carl Finke of the Đurđevac regiment<sup>35</sup>. The managing of the Bjelovar silk factory was assigned to first lieutenant baron Messina of the Križevac regiment<sup>36</sup>. He was paid a monthly supplement of 10 Fl. for managing the factory. However, the military authorities did not approve his request for an additional 200 Fl. reimbursement for costs incurred during travel in his capacity as factory manager<sup>37</sup>. Carl Neumann a jailor from Bjelovar was appointed factory foreman (*Factor*), and ensign Stadler was to co-ordinate the sale of silk commodities<sup>38</sup>. Sirecz was appointed sericulture supervisor for which he received an annual pay of 150 Fl.<sup>39</sup> The factory administration concluded employment contracts with overseer (*Werckmeister*) Waurichem, ribbon-maker (*Bandmacher-Meister*) Johan Baptist Marini and dyer Rader<sup>40</sup>. Borderer apprentices (*Lehrjungen*) were employed with the factory and for their work received a monthly allowance (*Kostgeld*) for food in the amount of 4 Fl. and were accommodated with local residents<sup>41</sup>. They could not relinquish their obligations to the factory easily. For instance second lieutenant Brissich from the Đurđevac regiment on May 6, 1790 made several futile attempts to have his son Johan released from obligation<sup>42</sup>. The factory signed business agreements with bill-of-exchange traders Schmittmer & Compagnie and a merchant from Zagreb Anton Peinkoffer. A merchant from Bjelovar named Sultz also requested permission to sell the silk products made in the factory. However, Emperor Joseph II agreed in 1787 to privatise the entire sericulture business<sup>43</sup>. This motivated merchant Peinkoffer from Zagreb in January 1788 to voice his intention to purchase the silk factory in Bjelovar<sup>44</sup>. Peinkoffer was the main supplier of silk from the Bjelovar factory. One of his customers was also a merchant and later the mayor of Petrinja Augustin Reiss<sup>45</sup>. The silk products of the Bjelovar factory were sold to merchants in Vienna, Graz, Zagreb, Šopronja and

<sup>32</sup> Juraj Sušnjak, "Kako je postao Bjelovar" (*How Bjelovar came to be*), *Nezavisnost*, 6/1912, no. 19, pp. 2-4. p-c, *idem*, pp. 107, 110. - D. K., "Iz historije grada Bjelovar" (*From the history of Bjelovar*), *Nezavisnost*, 22/1928, no. 11, p. 1.

<sup>33</sup> Rudolf Horvat, "Iz prošlosti hrvatskih gradova. Nekadašnja tvornica svilene robe u Bjelovaru" (*From the past of Croatian Cities. The onetime silk factory in Bjelovar*), *Jutarnji list*, 18/1929, no. 6099, p. 14.

<sup>34</sup> ÖStA; KA; SM; box 34; konv. Lw; marked B1538-1820, *Commissionsprotocoll* 5. 5. 1817.

<sup>35</sup> HDA; 426; book 134.

<sup>36</sup> *Idem*.

<sup>37</sup> HDA; 426; book 150; exhib. no. 1597.

<sup>38</sup> HDA; 426; book 129.

<sup>39</sup> HDA; 426; book 150; exhib. no. 782.

<sup>40</sup> HDA; 426; book 129 - book 150; exhib. no. 1067.

<sup>41</sup> HDA; 426; book 150; exhib. no. 1128.

<sup>42</sup> HDA; 426; book 150; exhib. no. 1350, 1476.

<sup>43</sup> HDA; 426; book 129.

<sup>44</sup> HDA; 426; book 137; exhib. no. 15.

<sup>45</sup> HDA; 426; book 150; exhib. no. 152.

Raab. Among the business associates of the silk factory were the Viennese merchant Martin Hannold, the Zagreb merchant Lastovich and the Karlovac merchant Joseph Subchich<sup>46</sup>. However, there were other interested parties for the purchase of the factory. Among them was the Head of the Bjelovar filature Mathias Valentin Sporrer<sup>47</sup>. Still, since he owed the factory 1,940 Fl. in 1788 his offer did not seem realistic at the time<sup>48</sup>. Apart from Peinkoffer and Sporrer, a wealthy merchant from Petrinja Nicola Kosztich was also interested in the purchase<sup>49</sup>.

The Banal-Varaždin-Karlovac General Command informed the management of the Bjelovar silk factory on December 31, 1789 that interested buyers should come to Zagreb with the necessary documentation on January 20, 1790. A Committee was appointed composed of the manager of the factory first lieutenant baron Messina, foreman Neumann and overseer Waurich. They were to present to the General Command a complete list of all materials, stock of finished products, machines, etc. and lieutenant-marshal Joseph Nikolaus baron De Vins was to be informed on the proceedings<sup>50</sup>. He confirmed on January 12, 1790 that he received an offer from the merchant from Petrinja Nicola Kosztich & Compagnie to take over the factory<sup>51</sup>. The Committee discussed the privatisation of the factory for a whole week<sup>52</sup>. De Vins informed the Karlovac-Varaždin General Command on February 28, 1790 that the Viennese merchant Weigel & Compagnie was opposed to the sale of the factory to the said Kosztich. Weigel warned that Kosztich couldn't take over the factory due to a pre-existing temporary agreement between the factory and a Viennese merchant and transporter (*Fuhrwesens Contrahent*) Fellner & Compagnie to take over the factory<sup>53</sup>. However, Weigel also emphasised that Fellner wishes to take over the factory only after the Turkish war is over<sup>54</sup>. Due to these circumstances Kosztich abandoned further competition.

With the departure of first lieutenant Messina to another duty and the death of foreman Neumann, on April 16, 1790 the Bjelovar factory management was left without two of its key people. Military authorities had to immediately find another officer to whom they could entrust with the managing of the factory<sup>55</sup>. A month later they appointed a Frontiersman from the Durdevac regiment Vinko Korren as the new foreman<sup>56</sup>. In the mean time accountant Renz and captain Streit drew up an inventory<sup>57</sup>. They established that Peinkoffer owed the factory 5,093 Fl. and 571 kr.<sup>58</sup> On April 24 De Vins forwarded to the Karlovac-Varaždin General Com-

<sup>46</sup> HDA; 426; book 150; exhib. no. 113, 715, 1605.

<sup>47</sup> HDA; 426; book 145 - Rudolf Horvat, "Iz prošlosti hrvatskih gradova. Nekadašnja tvornica svilene robe u Bjelovaru" (From the past of Croatian Cities. The onetime silk factory in Bjelovar), *Jutarnji list*, 18/1929, no. 6099, p. 14.

<sup>48</sup> HDA; 426; book 137; exhib. no. 521.

<sup>49</sup> HDA; 426; book 150; exhib. no. 38.

<sup>50</sup> *Idem*. Joseph Nikolaus baron De Vins (1732-1798) enters the Austrian army in 1748 as an ensign. During the seven-year war he becomes a major; in 1760 a lieutenant colonel and three years later a colonel. He received the rank of major general in 1773 and lieutenant-marshal in 1784. At this time he becomes the owner of the Hungarian Infantry Regiment no. 37. As artillery general he temporarily gets chief command in 1788 over all military units in the Turkish war and two years later he becomes the commander of the units in Croatia. Since in 1784 he was awarded the Knights Cross of the Military Maria Theresa Order, six years later due to his contribution in the Turkish war he is awarded a Grand Cross of the same Order. At the beginning of the first coalition war against the French Republic he is entrusted with commanding the armed forces in Northern Italy, and in 1795 he retires and returns to Vienna. After his health improved in 1798 the Court War Council appoints him general supervisor for the Croatian Military Border. Wurzbach, 3 (Vienna, 1858), pp. 273, 274.

<sup>51</sup> HDA; 426; book 150; exhib. no. 209.

<sup>52</sup> HDA; 426; book 150; exhib. no. 512.

<sup>53</sup> HDA; 426; book 150; exhib. no. 713.

<sup>54</sup> HDA; 426; book 150; exhib. no. 975.

<sup>55</sup> *Idem*.

<sup>56</sup> HDA; 426; book 150; exhib. no. 1477.

<sup>57</sup> HDA; 426; book 150; exhib. no. 1164.

<sup>58</sup> HDA; 426; book 150; exhib. no. 1128.

mand Peinkoffer's request to purchase the Bjelovar factory pointing out that he is not opposed to the sale under the condition that Peinkoffer supply a financial guarantee. He also had to comply with the same conditions as were given previously to Fellner. In his discussions with the authorities Peinkoffer expressed himself favourably concerning these conditions so there were no further obstacles for the transaction, at least in a formal sense. The only thing left for Peinkoffer to do was to submit the appropriate financial guarantee<sup>59</sup>. The debt he owed the factory was resolved through a mortgage on his house<sup>60</sup>. In the mean time the military authorities appointed inspector Sporrer Chief Inspector (*Seiden-Ober-Inspector*)<sup>61</sup>. On June 1, 1790 he sent to the Supreme Military Command his suggestion for the purchase of the silk factory. The Supreme Military Command forwarded this suggestion to the General Command pointing out the acceptable provisions<sup>62</sup>. Similarly to Sporrer, Peinkoffer also attempted to by-pass the General Command. He approached the Supreme Military Command directly and on June 8, 1790 requested that it hand over the factory to him. The Supreme Command took both requests under consideration and informed the Karlovac-Varaždin General Command that Peinkoffer deserves an advantage as regards the sale of silk products and Sporrer as regards silk production<sup>63</sup>. On June 9 Peinkoffer submitted to the General Command his registered letter of guarantee (*intabulirte Cautions-Instrument*) that represented a mortgage debt on a Styrian homestead Rigelsdorf valued at 15,000 Fl.<sup>64</sup>. He also replied that he no longer owes the factory any funds since he sold his wife's house to a merchant from Bjelovar Stanko George Bellich who through this transaction took over the said debt in the amount of 5,047 Fl. and 241 kr.<sup>65</sup> On June 17 in Zagreb Bellich confirmed his ownership of the house and his intention to pay off Peinkoffer's debt within five years<sup>66</sup>. The General Command, however, did not accept this letter due to several irregularities that did not give the necessary assurance to the State Treasury<sup>67</sup>. The General Command refused both requests from Peinkoffer and Sporrer, suggesting to General De Vins on June 11, 1790 that the factory remain under the jurisdiction of the State Treasury until the end of the war<sup>68</sup>. De Vins gave his support to this recommendation and requested concrete suggestions for improving the sale of silk products. In this fashion visits to annual and other fairs were recommended as well as concluding predefined quantity agreements (*Verlagsaccorde*) with merchants<sup>69</sup>. The factory's management requested from the General Command on June 12, 1790 an advance of 12,000 Fl. for covering the costs for reeling and weaving silk cocoons for the current year<sup>70</sup>. Apart from this it was necessary to paint the walls of several rooms in the factory and acquire new cauldrons<sup>71</sup>. Additional costs were incurred due to damage to the waterworks (*Wasserwercke*) in the filature, as well as wheels, gutters and channels that occurred during the spring of 1790<sup>72</sup>. The supervision over the Bjelovar silk factory was, on September 29, given to a Committee composed of second lieutenant Hiller and war commissioner Friedrich Beeg<sup>73</sup>.

<sup>59</sup> HDA; 426; book 150; exhib. no. 1220.

<sup>60</sup> HDA; 426; book 150; exhib. no. 1568.

<sup>61</sup> HDA; 426; book 150; exhib. no. 990. - book 165; exhib. no. 525.

<sup>62</sup> HDA; 426; book 149; exhib. no. 3166.

<sup>63</sup> HDA; 426; book 149; exhib. no. 3236.

<sup>64</sup> HDA; 426; book 150; exhib. no. 1632.

<sup>65</sup> HDA; 426; book 150; exhib. no. 1633.

<sup>66</sup> HDA; 426; book 150; exhib. no. 1720.

<sup>67</sup> HDA; 426; book 150; exhib. no. 1632.

<sup>68</sup> HDA; 426; book 149; exhib. no. 3322. - book 150; exhib. no. 1632.

<sup>69</sup> HDA; 426; book 150; exhib. no. 1746.

<sup>70</sup> HDA; 426; book 150; exhib. no. 1681.

<sup>71</sup> HDA; 426; book 150; exhib. no. 1787.

<sup>72</sup> HDA; 426; book 149; exhib. no. 3250.

<sup>73</sup> HDA; 426; book 149; exhib. no. 5201.



Later during 1792 Peinkoffer in his capacity as a supplier of a war hospital (*Spittals-Lieferant*) appeared before court as the plaintiff in a case against the hospital in which he stated that the hospital did not pay him 26,000 Fl. for supplies delivered. Sources mention in connection with this the deceased wife of the Croatian Vice-Roy Rauch and the chief surgeon Mitterbacher<sup>74</sup>. In 1792 Sporrer advanced to the position of sericulture director (*Seiden-Culturs-Director*). Despite the end of the war, the Bjelovar silk factory did not stay active for very long due to debts. The aforementioned business partner did not settle their debts regularly. In 1793 the debts of the merchants amounted to 24,760 Fl.. Therefore, the military authorities decided to close down the factory<sup>75</sup>. In the liquidation process the estate was valued at 81,875 Fl., while the total debt amounted to 71,243 Fl. 373/16 kr.<sup>76</sup> During the bankruptcy procedure the Križevac Canton represented the management<sup>77</sup>. By closing down the Bjelovar silk factory frontiersmen and citizens were deprived of “a significant source of income, and the money flow was significantly reduced”<sup>78</sup>. The filature in Bjelovar was shut down in 1795<sup>79</sup>. On May 17, 1793 the Križevac Canton informed the Karlovac-Varaždin General Command that due to the closing down of the factory several apprentices were laid off. It emphasised that some of them did not wish to work in the fields since they spent 5-6 years learning their trade. They were requesting to be given the possibility to finish their apprenticeship in another place and be given work at another location. The General Command inquired with the Križanić-Turanj textile factory whether they had any openings for these apprentices<sup>80</sup>. On June 4, 1793 the factory replied that it shall employ the laid off young frontiersmen. It did not, however, state how many of these youths it was willing to take on nor what their salary would be<sup>81</sup>. On August 1, 1793 the Križevac Canton informed that only 7 apprentices from the Bjelovar silk factory were available for work and the textile plant since the rest were either mobilised or were needed for farming work at their homes<sup>82</sup>. The textile factory reported on August 17<sup>th</sup> that only 5 of the 7 apprentices of the silk factory arrived while 2 ran away. Since the five apprentices who did arrive did not show any interest in staying, they were sent home. The General Command could not force them to stay in Križanić-Turanj since as apprentices they were not bound by command<sup>83</sup>. During the return journey home another two apprentices ran away not previously requesting permission to leave<sup>84</sup>.

In 1807 archduke Ludwig warned that the former Bjelovar filature must not be neglected any further, on the contrary plans should be devised for its future exploitation. The archduke was of the opinion that an expert should be called from Osijek who would conduct an accurate and professional survey<sup>85</sup>. Sericulture suffered because of the coalition wars during which it was neglected. The contemporary count Adam Oršić attributed the decay of sericul-

<sup>74</sup> HDA; 426; book 165; exhib. no. 415, 487, 524.

<sup>75</sup> HDA; 426; book 169; exhib. no. 1452 - Rudolf Horvat, “Iz prošlosti hrvatskih gradova. Nekadašnja tvornica svilene robe u Bjelovaru” (*From the past of Croatian Cities. The onetime silk factory in Bjelovar*), *Jutarnji list*, 18/1929, no. 6099, p. 14.

<sup>76</sup> This sum was comprised of the actual debt of 53,047 Fl. 177/8 kr. and an additional 18,196 Fl. 196/16 kr. a sum representing the balance to the price given to merchants Löv Backracz and Simon Moyses that were under priced for goods bought and paid only 33,000 Fl. ÖStA; KA; SM; box 34; konv. Lw; Relation von De Vins, 1798.

<sup>77</sup> HDA; 426; book 171; exhib. no. 600.

<sup>78</sup> “einen merklichen Nahrungszweig und verminderte beträchtlich den Geldumlauf.”: ÖStA; KA; SM; box 34; konv. Lw; Relation von De Vins, 1798.

<sup>79</sup> Same.

<sup>80</sup> HDA; 426; book 169; exhib. no. 1400.

<sup>81</sup> HDA; 426; book 169; exhib. no. 1525.

<sup>82</sup> HDA; 426; book 170; exhib. no. 2088.

<sup>83</sup> HDA; 426.; book 170; exhib. no. 2173.

<sup>84</sup> HDA; 426.; book 170; exhib. no. 2446.

<sup>85</sup> HDA; 426; box 21a; marked 1808-1-208 B-4519, Bericht von Erzherzog Ludwig. 28. 12. 1807.

ture to the lack of expert assistance and lack of financing, labour force and necessary supervision. Because of these circumstances all the domestic products were of poor quality and expensive<sup>86</sup>. Under these conditions sericulture for the most part fell into the hands of the Viennese company Hoffman during the first half of the 19<sup>th</sup> Century. This company took over the State silk factories and reeling plants in Varaždin, Osijek and other places in 1827<sup>87</sup>. The Frontier parson Luka Ilić Oriovčanin noted in this regard that Emperor Joseph II raised sericulture to an enviable level and it gradually developed “until it fell into the hands of a trail-blazer whose greed seriously damaged sericulture, and the enlightened people shall not be further deceived.”<sup>88</sup>

Sericulture progressed mainly until 1848. The Habsburg Monarchy lost Lombardy where 90% of Croatian silk was produced<sup>89</sup>. The final disastrous blow to sericulture was dealt in 1855 with a disease of silkworms. An additional unfavourable circumstance was the growing competition from France, Italy and later Japan<sup>90</sup>. Gradually sericulture in Croatia started to fall behind and it never recovered. The production of raw silk dropped from 867 cents in 1840 to 268 cents (31%) in 1854, and to 61 cents (7%) in 1859. In these conditions the Osijek filature was forced to lay off all its workers and close its doors. However, this was not the end of Frontier sericulture. Hostinec mentions silk factories in Bela Crkva, Pančevo, Josipovo, Mitrovica, Vinkovci, Nova Gradiška, Bjelovar and Petrinja. He further mentions the existence of spinning mills (*Spinngebäude*) in principal places. They used to be the property of the State Treasury, which leased them to private entrepreneurs, and during his time they were mostly sold to private owners<sup>91</sup>. The oldest silk factory in Bjelovar was re-opened in the 19<sup>th</sup> Century. Archive material mentions that silk yarn and silk fabric was produced there in 1840 on 40 looms, and silk ribbons on 26 looms. The Bjelovar silk factory was privately owned in 1867 by Bijelić and Vojnivić.<sup>92</sup>

<sup>86</sup> Adam Oršić, *Memoiren (Zagreb, 1814)*, p. 51.

<sup>87</sup> Jaroslav Šidak and others, *Hrvatski narodni preporod - ilirski pokret (Croatian National Renaissance - The Illyrian Movement) (Zagreb, 1988)*, p. 64.

<sup>88</sup> Luka Ilić Oriovčanin, *Lovorike Gradiškoga narodnoga graničarskoga puka br. 8 (Laurels of the Gradiška National Border Regiment no. 8) (Zagreb, 1874)*, p. 54.

<sup>89</sup> When in 1815 the Habsburg Monarchy spread to the area of Lombardy and Venice it became the largest producer of silk in Europe. In the mid-19<sup>th</sup> Century it produced approximately 500,00 cents of cocoons valued at 24 million Forint. Bićanić, *idem*, p. 147.

<sup>90</sup> Bićanić, pp. 154, 155.

<sup>91</sup> Josef Hostinec, *Die k.k. Militärgrenze, ihre Organisation und Verfassung. 1 (Vienna, 1861)*, p. 29.

<sup>92</sup> Mladen Medar, “*Izgled i namjena zaboravljene kasnobarokne građevine u Bjelovaru*” (*The appearance and purpose of a forgotten late baroque edifice in Bjelovar*), *Muzejski vjesnik*, 9 (Koprivnica, 1986).

## *Razvoj svilarstva i proizvodnja svile u Hrvatskoj*

Među privrednim granama koje su u Hrvatskoj Kraljevini uživale posebnu podršku Bečkog Dvora posebno je mjesto pripadalo svilarstvu. Riječ je o uzgoju dudova svilca, otpređanju svilenih čahura u sirovu svilu i, znatno manje, o daljnjoj preradi sirove svile u konac ili predivo. Proizvodnja sirove svile prema shvaćanjima merkantilističkih krugova bila je jedan od značajnih načina kako se jeftinom proizvodnjom i skupom prodajom sirove svile ostvaruje veliki profit i time popravlja trgovinska bilanca. Uzimajući u obzir usku povezanost gospodarskih rješenja marijaterezijanske kameeralistike uz organizaciju Vojne krajine, ne iznenađuje činjenica da je Bečki Dvor baš tamo započeo gospodarski eksperiment sa svilom. Svilarstvo je na svoj način predstavljao najprikladniji, najbolji spoj krajiških vojnih i poljoprivrednih obveza s jedne strane, i visoke gospodarske politike Monarhije, s druge strane. Svilarstvo je i po tome svojevrsan fenomen u Vojnoj krajini u proizvodnom poticanju gospodarskog napretka jer se svila nije proizvodila za domaće potrebe krajiškog stanovništva nego se izvozila u ostale dijelove Monarhije. Uzgoj dudova svilca uveden je 1761. godine u Slavonsku krajinu, tri godine kasnije u Varaždinsku krajinu, a između 1772. i 1774. u Bansku krajinu.

Svilarstvo se nije, međutim, uvelo samo u Vojnoj krajini. Kraljica Marija Terezija pozvala je patentom u 1763. godinu zemaljsku gospodu, uprave, samostane i općine u drugim zemljama Monarhije da uzgajaju bijele dudove. Proizvodnja svile se do kraja listopada 1800. nalazila pod vojnim nadzorom. Zatim je prešla u ruke Ugarske dvorske komore. Vrijednost proizvodnje kokona iznosila je četrdesetih godina 19. st. između 150.000 i 200.000 for. Zarada kmetskih i krajiških kuća od te proizvodnje bila je vrlo mala i nesigurna. Bila je to vrlo osjetljiva i rizična kultura, tako da je proizvodnja u nepovoljnim godinama znala pasti na polovicu godišnjeg prosjeka. Iako posao nije tražio velik fizički napor, zato je zahtijevao pažljivu i neprestanu brigu. Za čitav trud i za tolike neugodnosti, na čitavu je kuću u prosjeku otpala nadnica od jedva 20 kr. na dan. Prerada svilenih buba u filandama činila je drugu fazu u proizvodnji svile. Hrvatska je osamdesetih godina 18. stoljeća imala desetak filanda. Godine 1841. bilo ih je već 46. Što se Civilne Hrvatske tiče je Osijek imao 7 filanda, Križevci tri, Đakovo, Virovitica, Požega, Vukovar, Varaždin i Koprivnica po dva, a Cernik, Irig, Trpinj i Zagreb po jedan. U Vojnoj krajini je bila po jedna filanda u Novoj Gradiški, Oriovcu, Podvinju, Moroviću, Golubincima, Staroj Pazovi, Zemunu, Glini, Petrinji, Kostajnici, Đurđevcu, Virju, Čazmi, i Garešnici te po dvije u Vinkovcima, Mitrovici i Bjelovaru. Kvaliteta hrvatske svile nije se odlikovala finoćom i sjajem kao francuska i talijanska, ali zato je bila jača, teža i trajnija. Svilarstvo je napredovalo uglavnom do 1848. godine. Habsburška je Monarhija izgubila Lombardiju koja je do tada prerađivala 90% hrvatske proizvodnje svile. Konačni katastrofalni udarac zadala je 1855. godine bolest dudova svilca. Nepovoljno se odrazila i sve veća konkurencija Francuske, Italije, kasnije i Japana. Svilarstvo u Hrvatskoj počelo je zaostajati i više se nije oporavilo od tih udaraca.