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DEVELOPMENT IN UKRAINE THE SMALL PRIVATE SILK PROCESSING INDUSTRIES  
IN THE XIX – AT THE BEGINNING OF THE XX CENTURY

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The article investigates the development in Naddnieprianskaia Ukraine small private silk processing industries which throughout XIX – at the beginnings of the XX centuries remained the important component of the national economy. The special attention is paid to studying of the general scales, dynamics and regional features of development of small forms of production of a silk thread, silk weaving, filature, dyeing and an embroidery of silk fabric. The place of small private silkworm breeding in social and economic space of Ukraine is defined, the main stages and the directions of its modernization are analysed.

Keywords: small private silk processing industries, handicrafts, small industrialist, social and economic development, modernization, silk, mulberry, silkworm breeding, silk weaving, filature.
**Statement of the problem.** Small private silkworm breeding and related handicraft productions of a silk thread, silk weaving, filature, painting of silk fabric and an embroidery of silk fabric, got rather large-scale development in many regions of Naddnieprianskaia Ukraine and played a noticeable role in social and economic life of the country throughout XIX – at the beginning of the XX century. Especially it concerned certain regions where during this period small forms of silkworm breeding and became the mass phenomenon and made considerable profit for many small industrialists. Ukrainian silk processing masters convincingly proved great importance of small industrial business in national economy by own practical activities, combining popular wisdom with profound technical knowledge.

The analysis of the actual researches. The Ukrainian handicraft silkworm breeding and silk weaving history development in XIX – at the beginning of the XX century testifies that this problem remains the one of less-known pages in the history of Ukraine for scientific community. The historiography of a problem includes still not numerous, but domestic and foreign researches and publications. Among the works devoted to separate aspects of the chosen problem It should be noted especially researches of V.P. Vorontsov [1], M. Ezerskyi [6], D. K. Zelenin [10], M.P. Maslov [13; 14], O. O. Meshcherskyi, K.M. Modzalevskyi [16], E. M. Mikhaylov [17], O.D. Pogruzov [20], A.A. Rybnikov [21], K. M. Tarnovskyi [26], M. Tsitovich [34], etc. They collected and generalized a certain actual material which allows to estimate some aspects of small forms of silkworm breeding and a silk weaving development in separate handicraft of Ukraine.

The purpose of the article is defined by relevance of the chosen problem and extent of its scientific development by predecessors. For this reason the task of this article is to analyze the general scales, dynamics and geography of small private silk processing productions in Naddnieprianskaia Ukraine, to define the main stages and the directions of improvement of the social and economic and technical organization of trade, possibility of modern use in Ukrainian village the national production traditions which are saved up in the sphere of handicraft silkworm breeding and a silk processing.

**Statement of the main material.** On the territory of Ukraine the unique and expensive silk fabric got to an antiquity era, thanks to the Great silk way which passed here. The first known archeological finds of this fabric in the territory of Ukraine belong to the edge of our century. The history of silk threads production and a filature in the territory of Ukraine begins during much later period of world history – approximately in the XV-XVII century. In these centuries silkworm breeding was for the first time appeared in the Crimea grace to Greeks, Turks and Tatars, borrowed it from the Balkan Peninsula, and in is southern steppes in silkworm breeding were engaged Bulgarians who moved from Turkey. In the XVIII century "it was repeatedly discovered silk" in Eastern Europe, including in Naddnieprianskaia Ukraine [2, p. 29-30]. At this particular time in the south of Russia, in connection with fashionable trends, started to breed a silkworm. In the Russian Empire in silkworm breeding were engaged mainly in the Central Asian, Caucasian and Ukrainian regions. Unique properties of silk and history of its emergence which was surrounded by legends, made the streaming gentle fabric expression of power and luxury. Silk was so expensive that its production allowed to get huge profits and attracted to itself a great number of enterprisers [7, p. 59].

At the beginning of the XVIII century by order of Peter I the first silk processing factories were founded in Kiev and on lands of Slobodskaya Ukraine. In the second half of the XVIII century the general lieutenant E. A. Shcherbin achieved consent of the empress Catherine II to give him in the Slobodskaya Ukrainian the vicegerency Novay Vodolaga, Karavanskay and other settlements for silk production [the 15th page 391-392]. The formation in 1757 new, higher duties on the silk products imported into the Russian Empire and cancellations of an authorization system by Catherine II caused the new growth of silk-weaving factories. Thus many Ukrainian regions reserved a role of the all-imperial centers silk-weaving industry. The experience kept during centuries by the Ukrainian people
in the field of wool weaving, hemp and flax allowed to transfer developments of many simple types of silk fabrics to the village already at the end of the XVIII century. Ukrainian handicraftsmen engaged in silk processing made the big competition to manufactory [9, p.48].

All this first experience of development of silkworm breeding and filature made great success in Ukraine. There appeared certain technologies of cultivation of mulberry trees and cultivation of silkworms in Ukrainian country farms at the middle of the XIX century. At the same time it should be noted that at the middle of the XIX century silkworm breeding and filature in Ukraine had almost no character of handicraft, that is small-scale production. It was extended by mainly administrative methods among the state peasants and military people. For example, in the Chuguyev military settlement through each three meters landed a mulberry tree. By order of military commanders each peasant family were given to 10 g of a grena, and in two-three months the peasants had to give back cocoons to the state. Besides for stimulation of silkworm breeding special inspections were arranged (from 1800 till 1841 years), intended awards, lands were distributed, etc. [7, p. 39; 30, p. 411-414].

The Russian government paid special attention to the development of silkworm breeding in the Ukrainian provinces. Here, beginning from 1820th years, state filature factories were arranged, subsidies to business owners were given, societies of distribution of silkworm breeding were established, various training courses and schools of silkworm breeding are worked. In the second half of XIX – at the beginning of the XX century the broadest development of handicraft silkworm breeding and filature was observed in the Poltava, Kiev, Kharkov, Taurian and southern part of the Chernigov province [9, p. 24-26; 12, p. 83-85].

Formation and development of handicraft silkworm breeding and filature in these Ukrainian regions were promoted by activity of local country council. They free of charge provided with hybrid saplings of a mulberry tree of everyone of peasants. According to written sources, in the Ukrainian villages of a mulberry trees were planted on the waste ground, boundaries of fields, in front of country houses. For the third year the mulberry tree provided silkworm caterpillar with a forage. For receiving each kilogram of cocoons, proceeding from a proportion, traditional for Ukraine, the handicraftsman engaged in silk processing needed to hold about 160 mulberry trees. Many of the Ukrainian handicraftsmen planted and have significant amount of mulberry trees. The Melitopol district of the Taurian province can be an example. Here, at the beginning of the XX century the peasant M. S. Kovalev from the village Peschanoe planted in the own garden 850 mulberry tees, K.P.Shkurko from the village of Novo-Pavlovka – 800 mulberry trees, and his friend villager A. F. Dyachenko – 4000 mulberry trees [23, p. 219].

In total in the second half of XIX – at the beginning of the XX century Ukrainian handicraftsmen engaged in silk processing had about 4 million mulberry trees [the 18th page 290-291]. However, according to experts opinion, volumes of silkworms, raised in Ukraine, often lagged of opportunities of the food supply created here that give good prospects for further development of handicraft silkworm breeding. Besides from mulberry berries the Ukrainian peasants received fine wine, jam and juice which were very useful because normalized arterial pressure both at hypotensives, and at hypertensive persons. Mulberry berries also served as a fine forage for poultry. Thus, in Ukrainian country farms silkworm breeding was not only very profitable, but also waste-free production [7, p.68-70; 28, p. 241-244].

During the XIX – at the beginnings of the XX century in the Ukrainian provinces were constructed state and territorial silkworm breeding plants, bases of preparation and preprocessing of cocoons, filature factories; the state and territorial mulberry nurseries are organized; the uniform state and territorial system of selection and breeding work and so forth is created. Scientists and specialists of Department of agriculture created new highly productive breeds and hybrids of a silkworm, high-yielding grades of a mulberry and more
Effective receptions of its agricultural technicians were developed. All this provided Ukrainian handicraftsmen engaged in silk processing the opportunity to receive on average to 2 kg of cocoons from each gram of grana [25, p. 142]. The situation in the Chernigov province where only in 5 years, from 1888 till 1892, the Chernigov territorial council managed to distribute to peasants 16405 saplings of a mulberry trees could be an examples of close attention to the development in Ukraine of small forms of a silk processing factories by side of the state and country council [19, p. 61-62; 30, p. 422].

Rather widely and dynamically developed the filature industry in the Kharkov province. The South Russian society of acclimatization and local councils mainly free of charge provided local handicraftsmen with saplings of a mulberry tree and worms. At the Kharkov agricultural school silkworm breeding courses are worked. All this, along with a favorable environment, yielded positive results. Silkworm breeding and a filature became not only the important direction for development of small business in rural areas, but also a revenue for several thousand of country families [25, p.79-80].

One more traditional center of post-reform development of handicraft silkworm breeding and a filature in the Kiev province were Uman, Tripolye and Tarascha [7, p. 51]. Such geography was defined by various historical circumstances. So development of handicraft silkworm breeding in the village of Tripolye of the Kiev district was connected with a name F. V. Chizhov, in the Taras-chansky district with a name of I. P. Shumskyi, and in Uman district with a name of I. I. Korablev [22, p. 148-150]. So in May, 1850 F.V.Chizhov leased at the Ministry of the state property the 60 arpent of the filature plantations on the farm of Tripolye in 50 km from Kiev. These plantations of a mulberry during of many decades didn't bring to treasury any income and therefore were given to Chizhov for free use for a period of 24 years. For the purpose of faster distribution of silkworm breeding in nearby villages and the farms Chizhov began to distribute free of charge to local peasants mulberry trees and larvae of silkworms. Besides, Chizhov organized at the plantations school of practical silkworm breeding for the boys going for training at the expense of parish schools from different provinces of Ukraine. In two-three years at Chizhov's plantations some hundreds of country families began to be engaged in a domestic industry, new to themselves and to receive rather high income [37, p. 316-317].

Rather poor neighbors landowners, having heard about successful business management on the Chizhov filature plantations, also began to be engaged in filature. As a result in the Kiev district were created Tripolskyi filature district where more than 400 handicraftsmen were engaged in production of silk threads and fabrics. This area consisted of Tripolye and 12 neighboring villages. The village of Tripolye was the center of cocoons production and filature, and the village of Obukhovo was the center of handicraft silk processing. In other villages peasants only got cocoons which were unwound in the village of Tripolye, and silk fabric were weaved in Obukhovo [3, pp. 48-50; 23, p. 589].

The huge influence on development of handicraft silkworm breeding and filature in Ukraine at the end of XIX – at the beginning of the XX century was rendered by I.I. Korablev's activity. In 1898-1902 he studied the theory and practice of silkworm breeding at the Moscow agricultural institute. After graduating the institute Korablev was enlisted to the expert on silkworm breeding at the Department of agriculture and sent to Poltava for carrying out work on development of silkworm breeding in the Poltava, Chernigov and Kharkov provinces. Here Korablev's activity was directed on inspection of a condition of handicraft silkworm breeding, on the organization of short-term and long courses of silkworm breeding, the publication of articles in agricultural magazines and calendars, lecturing for handicraftsmen. He created the development plan of a handicraft silk processing in Ukraine [7, p. 34; 29, p. 384-386].

In 1907 I.I. Korablev was transferred from Poltava to Uman for teaching silkworm breeding in local school and management silk station. At the same time he was as expert on silkworm breeding at the Department of agriculture. He organized at school a silkworm breeding office, and at a silk station - the mu-
seum of silkworm breeding. Besides, for the national schools were started the production of educational collections, preparations for help in area of promoting of silkworm breeding [4, p.116-117]. I.I. Korablev paid special attention to national teachers as considered they play an important role in creation and development small private filature enterprises. For this reason annually at Uman school of gardening I.I. Korablev organized for teachers half-month courses on silkworm breeding. Each year 150 teachers gathered here from the most far provinces. The best of them were stay at a silk station on year training after which they became instructors. Gradually Uman school became the center for people who are interested in silkworm breeding, among them were many serf handicraftsmen. Thanks to the received knowledge they could master progressive methods of silkworm breeding and a filature [32, p. 218].

The second half of XIX – at the beginning of the XX century was the period of organizational and technical formation of Ukrainian handicraft silkworm breeding and filature. At this time everywhere in Ukraine feedings of silkworms was concentrated generally in country farms. In the same time the Ukrainian handicraftsmen actively developed new methods of receiving and processing of silk. The general production of dry cocoons in Ukrainian handicraft farms annually made about 24 t, and raw silk to 4,8 t. From these raw materials handicraftsmen annually made about 343 thousand meters of the silk fabric [11, p.61-62].

During XIX – at the beginning of the XX century small private silk processing enterprises connected with production of a silk thread, silk weaving, filature embroidery, coloring of fabric received wide-spread distribution in Ukraine. Handicraftsmen made silk fabric of the threads received from cocoons of caterpillars of a silkworm. Caterpillars brought out of a grena – silkworm eggs which were similar to granular caviar. In small handicraft the filature farms of Ukraine in production was usually used no more than one zolotnik (4,26 g) of a grena. For example in all Tripolie filature district annually revived about the 35 zolotniks (150 g) of a grena [5, p. 148-150].

Revival or incubation of a grena in Ukrainian farms often took place directly in the room of a country log hut which for a while turned into an incubator where was maintained temperature 23-25 C. The house incubator was tried to be kept clean, adhered to silence and a certain humidity, constantly aired, but didn't allow the strong movement of air [the 24th page 101-104]. Development of a grena in handicraft conditions required 8-10 days then were born small, only about 3 mm long larvae. They were painted in dark-brown color and covered with bunches of long hair. These caterpillars which hatched handicraftsmen often also grew up in directly in the houses, or transferred caterpillars to feeding in the the special well aired room with a temperature of 24-25 C. Here caterpillars displayed on feeding troughs on the special fodder whatnot. Each of this whatnot consisted of several wooden, straw or reed shelves fitted by thick fabric. On shelves constantly, from 4 to 8 times a day, peasant children imposed fresh leaves of a mulberry [the 16th page 529-531]. In Ukrainian handicraft farms the worms were fed by cut leaves of a mulberry, absolutely pure, exclusively fresh and dry. Appetite of caterpillars grew very quickly. For receiving 1 kg of cocoons it was necessary to give 17-18 kg of leaves of a mulberry, in the best handicraft farms – 11-12 kg [32, p. 368].

At the temperature 20-25 C the development of a larva took approximately a month, at more high temperature quicker. For production of a cocoon there were about 4 days. Length of a thread of one cocoon was from 350 to 1000 meters [31 p. 41-42]. To receive a silk cloth from cocoons of a silkworm, multi-stage processing of raw materials was necessary. Handicraftsmen needed to collect cocoons, then to make their rejection, unwindings and chemical strengthening of a thread. For unwinding of a silk cocoon in a thread handicraftsmen used special filature machine. Inside it previously processed cocoons unwinding on special bobbins which rotated under the influence of a flywheel. Such machine was put in action by a pedal or the handle, and
its productivity reached one and a half kilograms of a silk yarn a day. Ready silk threads had opaque yellow color and were deprived of gloss. They received it at the subsequent processing with use of silk glue. Then threads were painted and woven from them silk fabric [33, p.221-226].

Before painting handicraftsmen subjected a thread to processing in four stages: 1 – washing, 2 – boiling, 3 – bleaching, 4 – etching. After unwinding of cocoons and merging silk threads handicraftsmen washed out them by clear hot water. Silk thus was cleared and became white as lost the remains of sericite and dirt. After washing of a thread it was possible to use for production of one-color fabrics. If threads intended for production of multi-color fabrics, them subjected to further processing: boiling, bleaching and, depending on dye, to etching. The same operation passed and one-color fabrics before coloring. For coloring of silk in Ukrainian handicraft industry phytophesis dyes were used. The cap received from a madder root was the main dye of a phytogenesis of fabrics in red color in Ukraine. When coloring fabrics in black color the iron vitriol was used. For coloring of fabrics in yellow color fruits of some plants were used. For coloring of fabrics in dark red color the ochre was used [23, p. 425].

After coloring came the weaving stage. In the second half of XIX – at the beginning of the XX century Ukrainian handicraftsmen used filature machines, such as the machine applied a wheel to fiber straightening already rather difficult silk-spinning, to twisting straightened fibers in a yarn, twisting a wheel, the weaving loom, etc. Technical revolution in the silk industry came to the end later, than in other branches therefore all handicraftsmen who couldn’t compete to mechanical production, passed to production of simple silk fabrics. As a result the number of mechanical weaving looms in Ukraine exceeded number of manual states only in 1908 [24, p.149].

Conclusions and prospects of further researches. Studying and the comprehensive analysis of the given material testifies that small private productions of silk and silk fabrics during XIX – at the beginnings of the XX century remained an important component of the Ukrainian national production culture. The period of the second half of XIX – at the beginning of the XX century became national history as the most important stage of development small private silk processing productions when this trade became an integral part of the economic and spiritual life of the Ukrainian people, filling it with peculiar production traditions, customs and ceremonies. During the considered period the Ukrainian national masters proved culture of a small-scale production of silk and silk fabrics almost to perfection and approximately to the beginning of the XX century the silk fabrics of various variants and clothes from it became in Ukraine prime necessities.

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