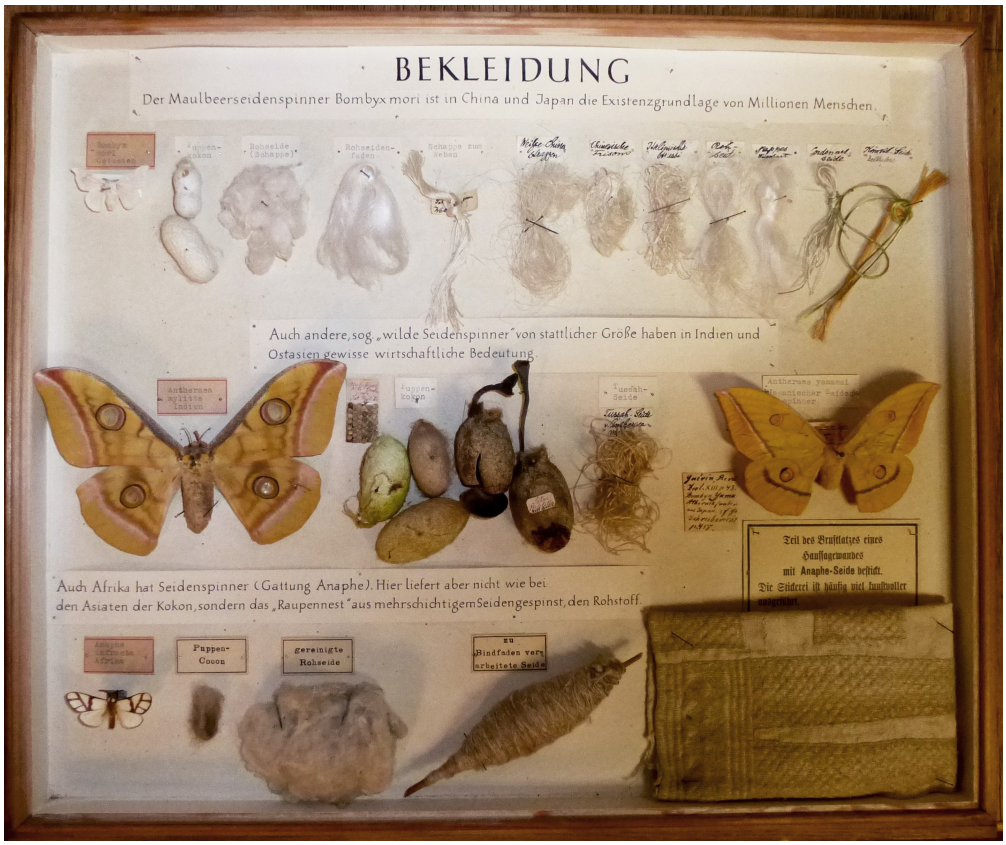
Silk Culture

The history of silk farming in Prussia



Display case from the Lepidoptera Collection at the Museum für Naturkunde Berlin. (Image: Britta Lange/MfN. All rights reserved.)

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Clues about the history of silk farming can be found in research conducted by the Prussian Academy of Sciences (Preußische Akademie der Wissenschaften). In the 1880s and 1890s, the academy occupied itself extensively with the mercantile economic system under the reign of Frederick the Great and published a wide range of 18th-century sources as well as relevant historical analyses of various forms of industry in the series *Acta Borussica*. The first to appear were the three volumes on the *Prussian Silk Industry*[1] in 1882, which presented it as a model of success.

According to this publication, silk manufacturing in China had been a closely guarded secret for thousands of years until two monks smuggled the seeds of the white mulberry tree and some silkworm eggs from China to Byzantium in 522. In the 8th century, silkworms made their way from Byzantium to Spain, Italy, and France, and, in the 17th century, the German provinces made their first attempts at silkworm cultivation. Driven by the economic interest in silk, a

global, transnational story unfurled in which these animals and the trees necessary for their survival underwent repeated (migrations).

In the 1680s in Prussia, the Great Elector Frederick William of Brandenburg (1620-1688) set his sights on 'silk pulling' as one of the measures that could potentially revive agriculture and trade in Brandenburg, which had been devastated by the Thirty Years' War. He had special hopes for the Huguenots, the French religious refugees whom he had permitted to settle in Protestant Prussia after King Louis XIV of France had revoked the Edict of Nantes in 1688, thereby rescinding all of the Calvinist Protestants' religious and civil rights.

In 1897, a few years after the publication of the *Acta Borussica* on the silk industry, the historian Leopold Hermann Fischer printed excerpts from some correspondence as part of the Academy of Sciences' self-historicisation of Prussia. They were letters that the philosopher Gottfried Wilhelm von Leibniz (1646-1716) had exchanged with the teacher and agriculturalist Johann Leonhard Frisch (1666-1743) until Leibniz' death in 1716.[2] As early as in the 1690s, Leibniz had been considering silk farming, which had been tested in other German electorates, as a means of financing a scientific society. The famous philosopher first used the term 'silk culture' (Seiden-Cultur) to designate this form of agriculture in 1703 in a memorandum he wrote to the Prussian King Frederick I (1657-1713) to convince him of this enterprise and to persuade him to provide the Society of the Sciences (Societät der Wissenschaften), which he had founded in 1700, with funding.[3] Leibniz explained that this would be a lucrative line of business that would create many jobs. The society would take over the mulberry orchards that already existed in places like Köpenick and Glienicke and afforest them. Moreover, *Morus alba* nurseries would be set up, and their saplings could then be used to plant more trees in the urban area. Finally, Leibniz pointed to the decorative character of the mulberry trees, which could be used to decorate the avenues leading to the palaces outside the city: "It would look beautiful if such boulevards led from Berlin to Schönhausen, Fridrichsfelde, and other nearby royal houses."[4] The new line of business, based on the intrinsic connection between the silkworm and the white mulberry tree, became visible in the environment and landscape that took shape, above all in the trees that were planted, which were also intended to serve ornamental purposes.

"It clothes the rich, it feeds the poor"

In 1707, Leibniz did in fact receive the privilege (the sole right) from the king to 'culture' mulberry trees for the Society of Sciences. Because his main place of residence was Hanover, he hired the teacher Frisch as his trustee. The orchards that had been acquired were tended, nurseries set up, and white mulberry trees planted at public squares, in cemeteries, and on the city fortifications following Leibniz' instructions. In 1717, the Soldier King Frederick Wilhelm I (1688-1740) allocated parcels of land in the south of Tiergarten park – the germ cell of what would later become the Moabit neighbourhood – to 18 Huguenot families from Orange to cultivate mulberry orchards.[5] Further weaver and spinner colonies, for example in Nowawes near Potsdam and in Friedrichshagen, emerged, which began by working wool, but increasingly began spinning silk.[6] If we take into account the privileges granted to the religious refugees and the conflicts that

ensued with them, but also the privileges granted to Jewish businessmen in Berlin and Brandenburg and the discrimination they faced,[7] the history of silk harvesting and processing in Prussia also proves to be a complex history of religious minorities.

Ultimately, the golden age of silk farming in Prussia was the period 1740-1786 under the rule of Frederick II, who provided it with state support in the form of a convoluted system of subsidies and penalties with the goal of achieving the best possible self-sufficiency in raw materials.[8] He established manufactories and decreed silk production an agricultural sideline for teachers, sacristans, and pastors, even though it was extremely unpopular with this group. The industry flourished, and Prussia reached the pinnacle of its silk production in the 1780s[9] – "It clothes the rich, it feeds the poor", reads the engraving on a prize medal for silk farming made in 1793.[10]

Beneficial Insects: From the Silkworm to Silk

Upon their arrival in Germany/Brandenburg, silkworms were referred to as 'Seidenwürmer', which directly corresponds to the English term 'silkworms'. However, they are now referred to as 'Seidenraupen', which translates as silk caterpillars. In contrast to so called (pests) like (rats) which travelled on ships as stowaways, silkworms were imported as (beneficial animals). The fact that it was at all possible to raise and utilise the silkworm in northern Europe, which is characterised by cold winters, was due to its biological properties. Experience had shown that silkworms could be prevented from hatching for almost an entire year by storing the eggs in a cool place. Mulberry trees only bloom once a year in northern climes, and because their young green leaves provide sustenance to silkworms, the eggs would be warmed to 25 degrees in early summer to be hatched. In Prussia, it was usually women who were tasked with caring for and cleaning the young caterpillars, which had to be fed with the green leaves of the mulberry tree for about 32 days before they pupated. The silkworm spins its cocoon from a single silk thread produced by its salivary gland, which can grow to lengths of up to 2,000 metres. In its cocoon, the pupa develops into a moth that ultimately hatches but is unable to properly fly and soon mates before it lays more eggs and then dies.[11] As the German handbooks and encyclopaedias of the 18th century attest, the moths had to be prevented from hatching as it would damage the silk threads. In order to obtain the silk, the cocoons were thrown into boiling water a few days before they were due to hatch, killing the pupae, so that the silk thread could then be unwound whole. The moths were only allowed to hatch for reproductive purposes, and their eggs were then kept for the next cycle.[12] The life cycle of (silkworms) is thus characterised by processes of biological transformation, while silk farming relies on transformations that turn the (animals into objects).

This breeding process, entangled in complex [metabolisms], brought together significant industrial sectors in Prussia, southern Europe, and China, as well as the social history entangled with them.

Old display case showing the developmental stages of Bombyx mori, *Museum für Naturkunde Berlin, Lepidoptera Collection, 2020. (Image: Britta Lange/MfN. All rights reserved.)*

Another display case of unidentifiable date at the Museum für Naturkunde Berlin bears the label ‘clothing’. Today it is preserved in the collection, but it is likely that it had once been arranged for an exhibition. Its introductory sentence reads: “The silk moth Bombyx mori provides a livelihood to millions of people in China and Japan”, pointing to the economic power of silk manufacturing and keeping silkworms as ‘working animals’ in manufactories, but also in private households. It may thus not come as a surprise that the Zoological Teaching Collection of Friedrich-Wilhelms-Universität (today’s Humboldt-Universität zu Berlin) holds a historic model of a silkworm. The silk moth is given preference over other pupating butterfly species, as its silk thread can be wound off in one piece if humans have the required skill. Twisting off the individual threads creates an even yarn and therefore a smooth fabric, while other species of caterpillar produce shorter pieces of thread, producing an uneven thread from which ‘wild silk’ can be woven, which is of differing thicknesses.

At a macro level, the idea behind ‘silk culture’ in Prussia was achieving self-sufficiency in raw materials. However, there were other questions and issues at play at the micro level. Although keeping silkworms privately was occasionally lucrative, it was not pleasant, to which a number of sources attest, including letters written by horrified pastors and teachers to Frederick II.[13] Caring for the ravenous caterpillars was expensive and time-consuming: numerous handbooks from the late 18th and 19th century explain in detail how silk rooms were furnished, frames built, leaves draped, the temperature monitored, and the approximately thumb-sized caterpillars cleaned of excrement. The animals were frequently plagued by disease, they stunk, and they often died prematurely, as Johann Wolfgang von Goethe, for instance, writes in *Truth and Poetry* with

respect to his father's caterpillar breeding operation near Frankfurt am Main: "The corruption which ensued produced a smell really pestilential, and because the dead and diseased had to be taken away and separated from the healthy, the business was indeed extremely wearisome and repulsive [...]."[14]

In a book from 1790, we read: "The silkworm and the bee are the most beneficial insects for humans."[15]

In spite of myriad efforts, it was not possible for the Prussian state to do away with silk imports from Italy and France with all these measures. On the contrary: in the 19th century, silk farming declined in Prussia due to the lowering of customs barriers, increasing commercial freedoms, and overpowering competition from southern European lands. Although a Silk Farming Trade Association (Seidenbaugewerbeverein) had been founded in the 1830s, cultivation continued above all at a local level – through private initiatives like that of the teacher Türk in Zehlendorf[16] or the mulberry orchard planted by Johann Adolf Heese in Steglitz in 1840. Street names like

Plantagenstraße (Orchard Street) and Filandastraße ('filanda' is the Italian word for a silk mill), but also Maulbeerallee (Mulberry Boulevard) in Potsdam, are testament to this now widely forgotten form of industry. From the late 19th century onward, the idea of achieving industrial self-sufficiency through silk farming was propagated again and again, and, in the 20th century, Germany saw revivals in silk farming after the First World War and during National Socialism for the manufacture of products like parachute silk. In the 1950s and 1960s, now in the GDR and above all in Vogtland, silk was once again produced with the goal of ending the state's reliance on imports from the West.[17] And what is it like today? In Berlin and Brandenburg, old mulberry trees still bear witness to silkworm cultivation. But even though silk mills still remain in Vogtland, they now source their silk from the global silk trade, from places like Brazil.[18]

Footnotes

1. Gustav Schmoller and Otto Hintze. *Die Preußische Seidenindustrie im 18. Jahrhundert und ihre Begründung durch Friedrich den Großen*. Acta Borussia, vol. 1-3. Berlin: Verlag von Paul Parey, 1892.↩
2. Cf. *Joh. Leonh. Frisch's Briefwechsel mit G.W. Leibniz: Ein Beitrag zur Geschichte des geistigen Lebens in Berlin am Anfang des 18. Jahrhunderts*. Dr. L.H. Fischer (ed.), Sonderabdruck aus Band 2 des Archivs der Brandenburgia, Gesellschaft für Heimatkunde der Provinz Brandenburg zu Berlin. Hildesheim; New York: Georg Olms Verlag, 1976 [1896].↩
3. G.W. Leibniz. *Denkschrift an König Friedrich I.* Klopp Reihe I, vol. 10. no date/probably 1703: 372f. (Schriftstück XVII-1), 373-378 (Schriftstück XVII-2).↩
4. Leibniz, no date/probably 1703: 377.↩
5. Cf. Bernd Hildebrand. *300 Jahre Moabit: Zur Geschichte eines Berliner Stadtteils von der hugenottischen Gründung 1718 bis zur Eingemeindung nach Berlin 1861*. Heimatverein and Geschichtswerkstatt Tiergarten e.V. Berlin (ed.): Saint Albin Verlag, 2018.↩
6. Rolf Kießhauer. *Seidenraupen in Friedrichshagen?*, 2. rev. ed. Berlin: Brandel, 1998.↩
7. Not all Jewish people who petitioned the king received the royal privilege to engage in silk farming. Cf. Brigitte Meier. *Jüdische Seidenunternehmer und die soziale Ordnung zur Zeit Friedrichs II.: Moses Mendelssohn und Isaak Bernhard; Interaktion und Kommunikation als Basis einer erfolgreichen Unternehmensentwicklung*. Veröffentlichungen des Brandenburgischen Landeshauptarchivs BV035362462 52. Berlin: BWV, 2007.↩
8. Royal decrees imposed financial penalties for chopping down mulberry trees.↩
9. Cf. Erika Herzfeld. *Preußische Manufakturen: Großgewerbliche Fertigung von Porzellan, Seide, Gobelins, Uhren, Tapeten, Waffen, Papier u. a. im 17. und 18. Jahrhundert in und um Berlin*. Berlin: Verder Nation, 1994.↩
10. See for example Helmut Caspar. "Sie kleidet und ernährt: Wie in Preußen Wissenschaft und Künste sowie die Seidenindustrie durch Prämienmedaillen gefördert wurden". 2016. http://www.helmutcaspar.de/aktuelles16/muenzmed16/seiden.html (28.07.2021).↩
11. The silk moths had already become so inbred that they were no longer able to fly.↩
12. Cf. Johann Georg Krünitz. *Oekonomische Encyklopädie oder allgemeines System der Staats-, Stadt-, Haus-, und Landwirthschaft*, vol. 152. Brünn: Verlag Joseph Georg Traßler, 1830.↩
13. See for example Rolf Kießhauer. *Seidenraupen in Friedrichshagen?*, 2. rev. ed. Berlin: Brandel, 1998.↩
14. Johann Wolfgang von Goethe. *Truth and Poetry: From My Own Life*. Tr. by John Oxenford. London: Henry G. Bohn, 1848: 98.↩
15. F.J. Bertuch. *Bilderbuch für Kinder, enthaltend eine angenehme Sammlung von Thieren, Pflanzen, Blumen, Früchten, Insecten, Trachten und allerhand andern unterrichtenden Gegenständen aus dem Reiche der Natur, der Künste und Wissenschaften […]*. vol. 1. Weimar/Gotha: Landes-Industrie-Comptoir, 1790: plate I.↩
16. Cf. *Am seidenen Faden: Kolonisation und kulturlandschaftliche Entwicklung im Süden Berlins*. Berlin: Heimatverein für d. Bezirk Zehlendorf e.V, 2001.↩
17. Marina Heilmeyer and Michael Seiler. *Maulbeeren: Zwischen Glaube und Hoffnung*. Potsdam: Vacat, 2006.↩
18. See for example the silk weaving mill Plauener Seidenweberei GmbH, https://www.seide.de/ (26.08.2021).↩