

APPENDIX 2

The silk industry in Brianza

Introduced to Lombardy in the 16th century, silk processing remained on a handicraft level for the duration of the Spanish rule, after which, in the 18th and 19th centuries, it developed into a full-fledged industry, above all in Brianza and the areas around Como and Lecco. For almost two whole centuries, therefore, silk was considered the «Brianza gold».

ORIGINS

Silk and its craft were already known in China in ancient times; the silkworms and the know-how of making silk from silkworm cocoons was guarded jealously and kept from the neighbouring populations.

Then, gradually, this wealth was transferred to bordering civilisations: in India the first importation of Chinese silk and silk textiles dates back to the 4th century B.C.; the Greeks called China «the land of silk» and Chinese silk was already on Greek markets in the 3rd century B.C.

In the Roman Empire silk fabric, considered as precious as purple cloth, was so highly prized that in Rome, in the 1st century B.C., it was worn only by the aristocracy as a luxurious decoration. The silk that was brought to Rome came from a mysterious country, that of the Seri, where it was believed that silk originated from a kind of «wool tree».

This probably referred to the primitive custom of leaving the silkworms directly on the mulberry trees, from which the cocoons were later picked and transformed into a fabric known as *bombicina*.

There are also numerous references in the writings of Plinius (*Natural History*), Seneca (*Fedra*) and Tacitus (*Annals*), and many were the important events involving silk in the Middle Ages, which focused on central figures like Marco Polo, and the account of his famous exploits.

Sericulture, or silkworm cultivation, eventually spread across the Middle Eastern countries and arrived in Sicily, moving on to Lucca, Florence and Northern Italy, giving birth to the art which produced church ornaments, tapestries, and fabrics for fine garments and rich furnishings.

Certain cities, such as Damascus, Ormutz and Baldacco, have lent their names to types of fabric, evidence of how silk processing was developed in the Orient.

Conditioning stove used in the silk-seasoning station opened in Como in the 19th century.





The machinery and equipment of a silk mill used in the following procedures:
 - immersing the cocoons in basins of hot water;
 - finding and drawing out the end of the filament (brushing);
 - winding the end of the filament onto reels in the "chest" (Garlate Museum of Silk).

It appears that the introduction of silk processing in the Como region was due to two important events:

- in 1510 Friar Daniele, of the Order of the Umiliati, brought silk-worms to the area;
- at the same time, Pietro Boldone, of Bellano, who had worked in Vicenza, brought weavers from this city to Como, in order to teach the local people the craft and established the first silk mills (or *lavore-rij*, in dialect).

In 1554, a man named Pagano Merino set up a silk factory, with such excellent results that he was rewarded by the city of Como.

In the meantime, already at the beginning of the 16th century, the formerly flourishing wool industry began to suffer heavy setbacks, due to the abundance of foreign wares on the Lombard markets, of lower quality but less costly. This made it necessary to organise the manufacture of silk by exchanging craftsmen with Milan and encouraging

outsiders to come and set up new silk-processing laboratories.

Despite this support, the development of the silk industry was very slow throughout the 16th and 17th centuries. The manufacture of silk, in fact, remained limited to small initiatives, which could not easily be coalesced into a permanent industry of any importance, partly due to the great crisis suffered by the Lombard economy under Spanish rule. This crisis was caused by the almost constant conflict between France and Spain for the control of Europe, which forced the lands subject to the Habsburg crown to pay heavy taxes for Spain's military ventures. This led to a duty policy designed more to bring in funds to pay the armies rather than for favouring trade.

This state of crisis, which continued for the entire 17th century, led many workers and merchants to emigrate.

From Como, silk cultivation and processing spread to the surrounding villages and then also to Vallassina and Northern Brianza, which in the 16th century were under Milanese rule, being part of the County of Milan. There is, however, a question as to whether Brianza and Vallassina, which had always been used as the storehouses of the Milanese, had in actual fact learned the silk craft by other means, related to the capital and the demands of the court of the Visconti and Sforza families, who were among the first champions of the Lombard silk industry¹.

In any case, whether it came from Como or from Milan, the fact is that silk processing spread

¹ Duke Filippo Maria Visconti, in order to include in his dukedom a silk-weaving factory, brought in the most skilled and able silk craftsmen from Florence. As early as 1442, silk was being woven in Milan in a factory founded by a Florentine master craftsman; in 1479 Duke Galeazzo Maria Sforza ordered the cultivation of mulberry trees in the outskirts of Milan; Duke Ludovico Sforza, in the park of his castle at Vigevano, named «Sforzesca2, had a mulberry «nursery» and beginning in 1495, promoted an effective campaign for the cultivation of mulberry trees. This is the origin of the Duke's nickname «Il Moro», deriving from *moro* or *morone*, the name of the tree in dialect, which he even included in his coat of arms. The Empress Maria Theresa of Austria is famous for having ordered the nobles of her court to set up silk factories.

rapidly from the very beginning and took root throughout the Northern Milanese region and Lombardy².

In 1679, 124 silk mills were already in operation in the area around Lake Como.

Towards the second half of the 18th century, when the State of Milan was all under Austrian rule, a combination of favourable circumstances, including a protracted period of peace, administrative reforms, shrewd economic policy measures³ and population growth, stimulated an increase in agriculture that was to continue until the beginning of the 19th century.

It was not the introduction of new farming methods that saved the agriculture of the Brianza hills from ruin, but rather the almost ubiquitous presence of the ancient and well-known mulberry tree, affectionately known as the *morone*.

This humble tree, though limited in size because of often overenthusiastic «topping» and cutting for the purpose of encouraging the growth of dense and accessible masses of leaves in a short time and with the least possible work, has contributed greatly to the development of agriculture in Italy.

The silk craft immediately became one of the most important trades in the large village of Canzo, as well. In 1748 in Valassina and in the Lecco area of Brianza 248 spinning factories were registered, concentrated mainly in the villages of Parè, Valmadrera, Caslino, Canzo and Galbiate.

Mulberry trees undoubtedly already existed both in Canzo and in Valmadrera in the 1500s, but it was not until 1615 that mulberry leaves are recorded as being gathered and sold in Valmadrera (it should be remembered that a tax was paid on every *mulberry* tree).

The cultivation of mulberry trees, however, cannot be separated from silkworm raising, even though towards the mid-1600s it was attempted by several families in the Northern Brianza region. In the 18th century, silkworm cultivation became an annual practice for almost all peasant families.

So greatly did the local people rely on silkworm-raising that they sometimes contracted



Examples of basins for the extraction of the silk: top, a five-piece basin; above, a double, ten-piece basin (Garlate Museum of Silk).

² Since the beginning of the 17th century, many farmers and villagers have been involved in the production of silk, as Manzoni tells us in the second chapter of *The Betrothed*. Here is how the hero of the story, Renzo, is presented: «he plied the trade of silk-spinning, inherited, so to speak, from his family. Once a very lucrative trade, it was now already in decline, but not to such a degree that a good worker could not earn his living honestly. The work diminished day by day, but the continual emigration of workers, drawn to neighbouring countries by promises, privileges and good wages, ensured that those remaining behind would not want for work.» Lucia also worked in the silk trade, as a spinner. And where does Renzo go, when he has to flee Milan? He goes to his cousin Bortolo Castagneri, who lives in a village near Bergamo and is the «foreman» or, in actual fact, the *factotum* of a spinning mill. Naturally, when things also begin to go badly there, Bortolo takes Renzo with him, «in a carriage, to another spinning mill, fifteen miles or so away from the first. Here he presented him, under the name of Antonio Rivolta, to the owner, who, although the harvest had been poor, did not hesitate to take on a worker who had been recommended as honest and able by a man of honour whose word could be trusted».

Finally, what did he do at the height of his adventures and misadventures? He left the village and, together with the *baggiana* (pretty maid) Lucia, returned to the Bergamo area, where in partnership with Bortolo he purchased, at an excellent price, a spinning mill – for silk, naturally. Thus from spinner he rose to mill-owner!

And on the subject of spinners who cross from one country to another, the «Great Lombard» gives us a timely account of what, in fact, used to happen: «In Venice, as a rule, the Milanese silk workers were encouraged to move to the Bergamo area, and therefore were offered many advantages, and above all, that without which all the others amount to nothing – security.»

These customs continued until the 19th century, in the years when the silk manufacturing operations were transferred from the farm porch to the modern silk mill, which had inherited a similar architectural structure.

³ With a decree dated March 6, 1787, Maria Theresa of Austria abolished the trade «corporations»; having become anachronistic, inasmuch as they were rigidly protectionist and monopolistic, they promoted the systematic opposition of all forms of progress and innovation.



Interior of the Sala silk mill in Castello di Lecco (Giovanni Migliara, 1825)
Oil on canvas
Cariplo Foundation, Milan.

lies could thus utilise raw materials such as wool, hemp and linen to satisfy their own personal clothing needs while performing an income-earning craft, manufacturing goods to be sold by tradesmen in the village markets, or even abroad.

Silk, considered a fine fabric, was already processed as a secondary activity when in the 1700s it became the product upon which most of the work in Lombardy hinged. As such it involved agriculture (promoting a process of transformation of the farms, with the passage from a production destined mainly for home use and consumption to a larger production directed to a market), trade (with exportation) and the upcoming industry itself⁴.

Today, one no longer sees silkworms and *mulberry* trees in Brianza; many of us probably cannot even imagine the wearisome work of the farmers who, in the space of a few weeks, risked everything they had; if all went well, the family could permit itself some small comfort, pay a debt or put aside some savings for the future; if not, they were left with nothing but regret for all the hard work done in vain.

THE GROWTH OF THE SILK INDUSTRY – THE «BRIANZA GOLD»

The process of the development of silkworm-raising and mulberry tree cultivation, upon which the future silk industry depended, was favoured also by the production opportunities of 18th century landowners.

Unlike the Southern Lombardy area, which, for the entire 18th century, experienced steady growth in agriculture thanks to the diffusion of cattle-raising and fodder production (the two are closely related), in the area north of Milan the landowners could not gather together

⁴ On this subject see Appendix 1.

short-term debts to increase their production potential.

For the raising of silkworms, it was first of all necessary to prepare large, clean rooms, and to air out and dust lattices or wooden planks placed the year before and then arranged in shelf-fashion, one above the other. The cracks around the windows were then sealed and the rooms were disinfected and kept heated at a constant temperature of between 20 C° and 25 C°. At this point, the inside of the doors were lined with old blankets or quilts and, if necessary, fires were lit in the fireplaces.

The owners of silk-producing complexes were members of the solid local middle class, such as the Bovara, Verza and Gavazzi families, who excelled in this sector throughout the whole of Austrian Lombardy.

Silk-processing was a widespread activity in the domestic economy of rural households, which had always integrated their meagre income with assorted home-based weaving practices. Peasant fami-

sufficient capital to transform the dry patches of land into sufficiently irrigated areas. These latter alone, in fact, made it possible to cultivate fodder for the animals, which in turn provided the basis for agricultural growth, especially grain production.

In order to obtain the greatest profit from their investments, therefore, at a time when agricultural prices were steadily increasing, the landowners had no choice but to step up their tree cultivation, especially that of mulberry trees, which could be cultivated to match the pace of the growing demand of the international market. The introduction of power looms for weaving, moreover, brought down the prices of silk products, increasing their consumption considerably.

This led, on the part of the owners, to a completely new attention to their own funds – an attention that was to determine a change in the farming contracts that traditionally governed the relationship between landowner and farmer. The sharecropping system (which, basically, involved the equal division between the two of the whole agricultural production, diversified in such a way as to satisfy the consumption needs of the farming family) was replaced with a contract, named «fitto a grano» («rent in wheat»), which meant that the landowner received from the tenant farmer almost exclusively wheat and silk cocoons as payment. This simplified production, as well as increasing the productivity of the farming family, which was, in fact, entirely involved in the production process, especially regarding the raising of the silkworms, seeing their great importance in the balancing of the farmer's budget.

At the same time, and for the same reason, the girls and children worked in the spinning mills or silk factories, at first for a few months a year and later, with the consolidating of the industry, the whole year round⁵.

The remarkable increase in demand during the whole 19th century provoked an unprecedented development in Lombard silk production, above all in Brianza and the areas around Como and Lecco. In a short time, numerous spinning mills and silk factories sprang up, with

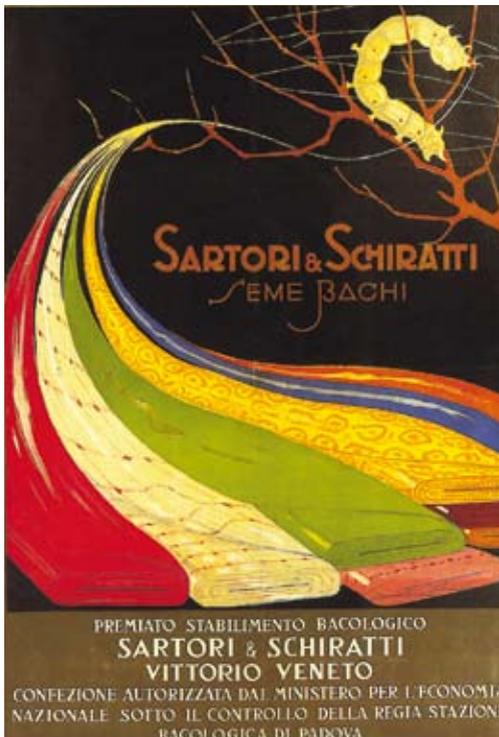


Interior view of the Mylius Silk Mill at Boffalora (Giovanni Migliara, 1828) Oil on canvas, 43 x 51.5 cm. Migliara's paintings, characterised by their impressive perspectives, represent the first artistic works depicting factory interiors.

⁵ Other factors also determined the development of the silk industry. Above all, Austria had put an end to the prohibitionist policy regarding the foreign trade of raw silk within its Lombard dominions, but to this was added a strong increase in the demand for silk from abroad, principally from England, then from France, the Rhineland and Austria itself.

The great demand for raw silk from the English markets had found in Lombardy an ideal supply area, so much so that, at the end of the Continental embargo, London succeeded in establishing a kind of monopoly for the importation of raw silk from Italy, just when the mechanisation of the industries had begun to reduce costs.

The silk industry in Lombardy also profited from the Piedmontese prohibitionism regarding raw silk exportation (which lasted until 1836), but it was undoubtedly also the high quality of the fabric that earned it a solid place on the foreign markets. Later, when London finally opted for Chinese and Bengali silk, after 1842, the silk produced in Lombardy found new outlets in the French market (especially Lyons) followed by Switzerland, Germany and Austria.



Posters from the period advertising companies specialised in silkworm breeding.

female and child workers from the countryside and the surrounding valleys, and not infrequently also «imported» workers, from the Po valley. Thus silk became a determining factor in the region's economic ascent⁶.

The population was almost totally concentrated in the areas involved in the production of silk. By the second half of the 18th century, therefore, the foundations of the Italian industrial revolution had been laid, and the effect was felt almost simultaneously, in the Lecco region and other areas of Lombardy and Northern Italy, with its English counterpart, socially and chronologically. It was, in fact, an advanced form of industrialisation, free from the «backwardness» which according to some historians afflicted Italian industry.

Silk was known, appropriately enough, as «Brianza gold»⁷.

«The centrality of the silk sector in the history of economic development in Lombardy is now a fact acquired from historiography – in the long run it is still the figure of the merchant-businessman who dominates the scene, with his ability to manage the complex cycle of silk manufacture, beginning from the aspect of «widespread» production, and at the same time to gain access to the international circuit in order to offer the product on the main European markets.

After the arrival of Asian silk, at the beginning of the 19th century, the great competitive capacity of Italian companies on the international silk market was the result of an extremely selective business behaviour *pattern*. This included special production and marketing approaches as

⁶ Silk production in Lombardy and, in particular, in Brianza, remained largely centred around the production of raw silk to be sold to foreign countries. Also widespread in the Brianza area were plants dedicated to the different stages of silk extraction; winding, doubling and throwing, while the weaving operations were carried out almost exclusively in the larger cities of Monza, Milan and Como, where, however, processed silk took second place to exported silk.

Silk-extraction, moreover, the process by which the strand is extracted from the cocoon, was the operation that, at least at the beginning, was most directly related to the farming world and, moreover, did not require special equipment, apart from a tank and firewood for heating it. For this reason, it was very often carried out in the farmers' own homes, and was for many years a secondary occupation, useful in some way for supplementing the family income. At the beginning of the 20th century it was still common to find silk-processing vats in the farmhouses, usually used, however, for discarded cocoons.

Silk-throwing was introduced later, because it was more profitable to export not just raw silk, but also different types of silk thread, ready to be woven.

⁷ During the first half of the 19th century, while a large part of silk-processing was still being carried out in the farmers' homes, concurrently with the great increase in the demand from abroad (as mentioned earlier), especially in the years from 1830 to 1848, the first silk mill concentrations emerged. The increase in the number of burners, greater control over the operations and more careful use of energy sources essential to the treatments (steam and water) resulted in a great increase in overall production.

While it is true that Brianza appeared as a supplier of raw silk or silk thread and that only the most important cities were able (thanks to available capital and technical skill) to run weaving plants for the manufacture of textiles, it should be remembered that, especially in the Brianza-Como area, household looms remained the rule through at least the first half of the 19th century; in fact, in this area the number of looms doubled from 1837 to 1848. Shortly afterwards, weaving was also inevitably subjected to the process of industrial concentration, which, however, only got fully underway at the end of the century, when, especially after 1888, numerous textile factories with power looms sprang up, following the example of the French weaving mills, particularly those in Lyons, which for years had been the sector leader.

Regarding all this, we should remember that the first owners to adopt power-loom weaving in Italy, in 1869, were the Gavazzis, with a variety of mills that covered all the stages of silk-processing. In 1876, of the 124 power looms operating in the province of Milan, 100 were concentrated in the Gavazzi weaving factory of Desio. The adoption of these machines spread like wildfire – so much so that in 1903 in Italy there were 11,500 power looms (most of which were concentrated in Brianza and around Como) against 1,020 hand-operated looms.

It is a fact, then, that already around the mid-1800s the silk industry was the main non-agricultural trade throughout Brianza; in other districts, such as those of Brivio, Cantù and Erba, the surveys carried out by the Austrian administration had reported that the only manufacturing activities were those related to the processing of silk.

well as the remarkable financial solidity and flexibility of the companies aimed at supporting from a great distance the marketing of this valuable product, whose price was subject to considerable fluctuations. These price fluctuations depended on the seasonal yield (in terms both of quality and quantity), as well as fashion and international speculative trends, but were not affected by the action of the individual merchant. Many were the cases in which the silk merchants, made extremely wealthy by woven goods and organzine, established multi-line banking businesses, although common also was the opposite situation, of financial dealers who extended their interests to the silk industry and other types of trade⁸.

It is interesting, furthermore, to reconstruct how the responsibility and the property were passed down through the generations.

«A relationship of trust within the family was the prerequisite for an undocumented transfer of the company capital to the offspring. The main assets, consisting in the non-productive real estate of the father's property, represented exclusively the composition of the property and were independent from the businesses that were passed down from generation to generation.

The continuity of the business appears in any case in the Chamber of Commerce documents, which also provide information on the training of these young men (sons, nephews, sons-in-law). Initially given the role of representatives, who sometimes travelled abroad for the family business, they were later made company shareholders, with their names occasionally appearing in the company motto; finally, they became fully-fledged partners, ready to take on responsibility, after an apprenticeship that lasted years and almost invariably included studies abroad, but the results of which appear to have been totally reliable, providing the certainty that the necessary qualities for running the business had been formed and the passion for the family company had been cultivated and developed in the best way.

It is in the family business that managerial qualities are fine-tuned and the mutual respect and expectations that generate trust and co-operation are set in motion, in addition to the dynamics of the transmission of a «naturally» ascribed trust. Shifting the attention, in fact, from the family *network* to the social system represented by the business, it is easy to sketch an outline of the family business, in which relationships are enriched by new contents of exchange. Also participating in this socialisation of kindred wealth within the family businesses, in fact, were more distant relatives, the in-laws, the «proxies». Those integrated into the companies, in fact, represent a significant portion, as do also those among them who would facilitate the founding of new independent businesses by using the creative potential offered by the organisational context of the entrepreneurial community. These were actually elusive processes, self-referential social mechanisms, seeing as their object was a mutuality based on experience, knowledge, education, attitude, selection, perception and the communication of



St. Giobbe (Job), represented in this picture, is the Saint protector of silkworm. Many St. Giobbe images still lie in the external frescos and in the Lombard farm-house niches where mulberry-growing and silk-worm raising were practised. In the image you can notice the mulberry leaves and the cocoons "at the wood".

⁸ Cinzia Martignone, *Le famiglie imprenditoriali lombarde nell'Ottocento*, in *Imprenditori e cultura. Raccolte d'arte in Lombardia (1829-1926)*, edited by Giovanna Ginex and Sergio Rebor, Silvana Editoriale, Milan, 1999.



Two more advertisements of silkworm-breeding companies.

values, feelings, self-awareness, motivation, etc. In short, all that which was non-economic and which became an economic resource par excellence in the sphere of 19th-century «individual capitalism» and an invaluable resource in the contexts of «hyper-socialised» transactions, such as those of commerce and banking, in which the larger part of the Lombard business community was involved.

The *network* of the family business (both immediate and extended) was the resource that made it possible to steer around the risks of a decline in competitiveness brought about by managerial inheritance, and accounted for the historical persistence of this complex social unit in which economic interests and family ties were inextricably intertwined.

The relationship micro-systems, created through marriages that were based on the same professional choices or different choices qualified by the *status* of the couple, are merely examples of the extent to which the systems of direct kinship revealed how rooted the parties were in the various economic sectors, which sometimes coincided with agreements on a business level between the two companies. These systems, therefore, represented a way of attaining a high social standing through marriages that sanctioned their access to the highest levels of wealth and prestige.

Were the industrialists of Lombardy really rich? The study of private estate in different urban contexts of the 19th century is the recent undertaking of Italian historical research regarding economic and social themes. Available in relation to the Milan area is the result of an initial work, in the form of a databank classifying all the property passed down from generation to generation in the period from 1861 to 1890, and providing interesting information on the size of the local business community and the wealth of the industrialists who died in the 40 years following the unification of Italy. Above all, the research reveals that the Milanese industrialists were much more numerous than those of Turin in the same period – almost half the number of male millionaires (approximately 150 individuals, with gross asset returns exceeding one million lira) were in fact from the families of merchants, bankers and industrialists, with a similar proportion of overall ascribable wealth.

In the list of Milanese millionaires, compiled according to data provided by inheritances, there were 37 bank or merchant ship owners and 34 factory or industry owners. More precisely, at the top of the wealth scale there were 20 or so industrialists from the silk sector, including Antonio and Pietro Gavazzi, Gaetano and Enrico Taccioli, Alessandro Negroni Prato, Giovanni Nosedà and Alberto Keller; and around 10 merchants spread over a variety of sectors (hardware, timber, grain, wine, etc.), including Giuseppe Frova, Francesco Biffi and Giovanni Maccia. Of the remaining 3 dozen, 5 were shopkeepers in the colonies, 7 were in the spinning and weaving trade, including Ignazio and Giuseppe Prinetti; 8 were cotton manufacturers, including Andrea Ponti, Francesco and Ercole Turati, Napoleone Borghi, Francesco Saverio Amman, and, finally, 16 were industrialists in various sectors, including Ambrogio Binda, Giuseppe and Luigi Branca, Giuseppe Ramazzotti, Tito Ricordi, Carlo Erba and Gerolamo Silvestri.

One last aspect of the family firm appears to be relevant – the extension of the industrialists' social responsibility to his own workers and the passion for the business were the rule; a fact that emerges clearly from the research. It is rare to come across an industrialist who sold off his business, even in old age: it was almost always passed down in the family. Also, the acquisition of titles, honours or land by various industrialists hardly ever caused them to retire from active business and simply live off their various rents.

The will of Giulio Richard reads: «I once more remind my dear children that my entire life has been dedicated to work and the development of my industry, always with the purpose of offering work and an honest living to the largest number of people within my means, having always believed that a good example and honest and regular work are the best way to render oneself useful to Society by improving oneself and others.»

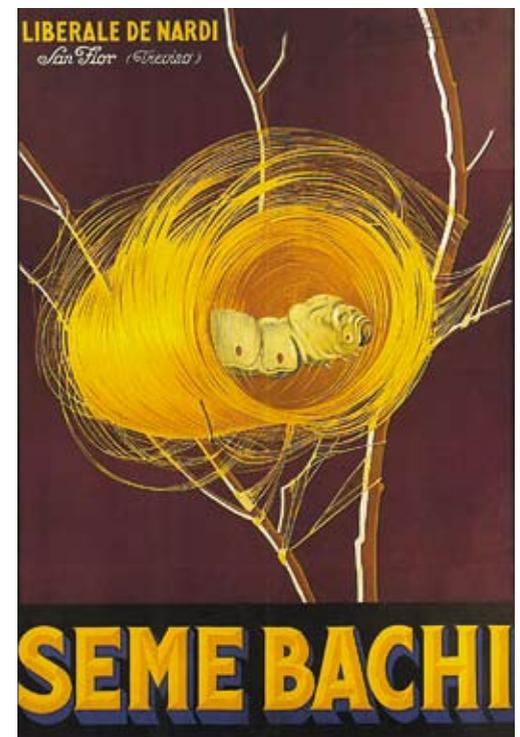
Apart from the various building ventures of the Gavazzis and the Crespi family, such as the construction of homes for the workers' families and the creation of service and solidarity centres for the factory workers, the building accomplishments of Lombard industrialists are generally well known, and various operations of general paternalism emerge in their wills. The beneficiaries included nursery schools, orphanages, hospices and welfare institutions, the social environment of the factory areas and sometimes even the town where the family had a country residence.

The essential building blocks of the «system» set up by the industrialist families in Lombardy are widely known – the Chamber of Commerce, the structures representing and safeguarding each sector and category, and those dealing with the economic promotion and diffusion of industrial culture. These represent as many occasions for exchange and comparison of traditional entrepreneurial energies (that is, the silk merchants and private bankers) with the «new men» of industry and finance corporations⁹.

INDUSTRIAL DEVELOPMENT IN THE LECCO DISTRICT¹⁰

The example of the Lecco district largely disproves the idea that Lombardy was all agriculture and little industry in the 18th and 19th centuries. Industry, in fact, was concentrated in various «enclaves», where it suppressed and replaced agricultural life.

In actual fact, at the beginning of the 19th century Melchiorre Gioia had already dubbed Lecco the «Manchester of Italy», a comparison that was to be confirmed throughout the entire century by all those who went there to study how the place had been affected by industrialism. From 1746 to 1770 the production of wheat in Lombardy showed a clear growth *trend*, after almost fifty years of crisis and stagnation, and turned resolutely towards exportation. In the decade from 1766 to 1775, in spite of a period of distinctly increasing production, prices also



Another silkworm advertisement.

⁹ See note 8.

¹⁰ From Maria Vittoria Ballestrero, Renato Levrero, *Genocidio perfetto. Industrializzazione e forza-lavoro nel Lecchese (1840-1870)*, Feltrinelli, Milan, 1979.



Silk manufacturing in the mills was so widespread that there were also a great many companies specialising in the sale of silkworm "seed". The above is an advertisement for such a company.

rose. Lombardy became an exporter of agricultural products at a time when the international market showed a sharp increase in demand. Worldwide demand was also dynamic in another field – that of silk cocoons and raw silk.

In the middle of the century the silk industry was the main industry of Western Europe. The exportation of raw silk and Lombard-produced silk thread increased from 186,000 librae in 1751 to 500,000 in 1778 and this became by far the leading item in the financial budget of Austrian Lombardy.

In the hills of Brianza and around Como, mulberry trees sprang up in increasing numbers. As the international market was favourable, silkworms were raised and, beginning from the second half of the 1700s, silk took the place of wheat as the first article of Lombard exportation. It was therefore natural to pass from agricultural to industrial production, from the raising of silkworms to the extraction of raw silk and the various stages of industrial processing.

The spinning and throwing of silk were the industrial sectors which, for one and a half centuries, profited from the extraordinarily favourable conditions brought about by the enormous surplus of capital and the work force available in the Lecco district.

Even before the 1700s, spinning and throwing had already reached the stage of «factory production», the work being carried out in large power-plant factories

This was the case especially with the throwing stage. As far back as the 16th century, water-powered plants of considerable size – the so-called «Bolognese mills» – made it possible to carry out all the complex throwing operations with one single, very large and highly mechanised machine.

In 1761, a report by the Chamber Magistrate of Milan noted that the silk industry, in a stage of economic expansion, was moving away from the city and into the country, and that «there were three reasons for this – one was in order to avoid paying duties upon entering the city; another was the fact that the work was made easier by water-generated energy, and the third was the lower cost of using peasant workers to process the silk ...».

At the end of the 1750s the territory of Lecco boasted 33 per cent of all the silk mills in the entire Dukedom, 29 per cent of the spinning factories and 58 per cent of the throwing plants. This meant that, while the Lombard economy in general was still struggling to find its feet after the critical stagnation of that century, in the Lecco district they were already engaged in the impetuous development of new industrial branches.

The Lecco area had a double «natural» advantage over the rest of Lombardy, represented by the presence of unlimited energy sources in the form of mountain torrents and the forests. Even more important was the «social» advantage of having broken through the restrictions protecting the farmer from excessive exploitation and therefore of having «freed» agriculture from feudal bonds.

The Lecco district «specialised» in silk manufacture, and it was only with the arrival of the First World War that this specialisation entered a depression.

In 1769, Councillor De la Tour, the Royal production inspector, recorded 9 spinning mills in Lecco and Castello, 14 in Malgrate and Valmadrera, 9 in Canzo and 7 in Galbiate – all water-powered, meaning they were all mills of considerable size.

In Lecco, the silk mills of Cima, Bovara and Rejna were undoubtedly the largest in the Dukedom. The Bovara family built a real industrial empire, with factories in Lecco, Paré and Malgrate, as well as a number of spinning mills.

The Gavazzis soon joined the Bovara family in their position as the area's leading industrialists and among the greatest in the whole of Lombardy.

On average, according to the official report of 1769, there were 12 workers for each silk mill, but in the larger mills the number increased.

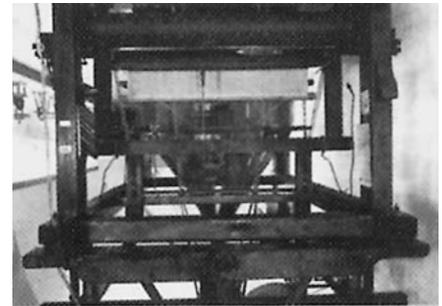
For example, 35 men and 60 women worked in the Bovara factory in Lecco, and the factory had a spinning and throwing capacity of as much as 73 quintals per year. On average, in Bellano each spinning mill was operated by 37 workers, and the same held for the Erba area, where 1,772 people worked directly on silk-throwing.

For each factory worker in the Lecco district there were 7-8 who worked outside the factory, in their homes, winding or processing silk.

In fact, in the second half of the 1700s, most processing operations were still done by hand, and firmly classified as «domestic work». In a report compiled in December 1779, it emerges that the spinning mill operators complained bitterly about the great difficulty of finding sufficient workers, while at the same time those with agricultural land complained that their holdings were poorly cultivated for the very reason that everyone was moving towards the more lucrative and certainly less taxing trade of winding and processing silk.

During the Napoleonic period, in Lecco, while the traditional iron and copper industry continued to exist, even enjoying a certain amount of growth, silk processing was nevertheless the most important activity in the district¹¹. At the end of the Napoleonic period, all the stages of silk processing – processing, winding, doubling and throwing – were carried out in the factories, and the work ceased to be done in the homes. The other sectors were characterised by the continuation of a pre-capitalistic-type industrialisation¹².

By this time, the Gavazzi family had become the leading industrialists in the area and among the most important in Lombardy, spinning respectively 10,000 and 15,000 librae of silk per year, compared with the few hundred produced by the traditional spinning mills.

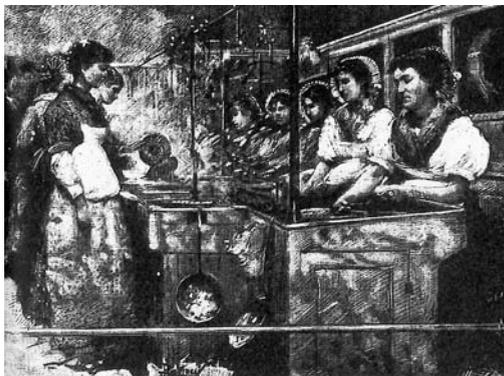


Top: a loom.
Above: a period print depicting silk spinning.

¹¹ 1,300 workers worked in the silk sector, 480 in the ironworks and 140 in the copper plants. In around 1810, out of a total district population of approximately 40,000, 7,000 worked in industry, the vast majority in the silk sector.

¹² In the mid-1830s there were 223 silk mills and 243 spinning mills in the Lecco area. An average of 7 people worked in each silk mill, and 34 in each spinning mill.

At the beginning of the 1800s, in the Lecco district, the number of silk mills had increased to 194, and in 1808 the Lario area had over 300 silk mills and 120 throwing factories, with a work force of 20,000 people, most of which was concentrated in the Lecco area. New machines were used for winding (transferring the thread from the skein to the spool), unknown outside the district.



Silk mill workers (from *Illustrazione Popolare*, 1882, 26, p. 405).



Silk extraction, from the book *Un paese del lago*, by Anna Monti Bernarini and Giancarlo Vitali, Mazzotta, Milan, 1982.

The manufacture of raw silk in Lombardy between 1820 and 1840 doubled, but the growth in the Lecco district was considerably above the regional average.

Approximately half of Lombard silk production was based in the province of Como, with the Lecco district boasting a good 80 per cent of the factories (processing and throwing) in the province.

The official Austrian survey of 1840 (a kind of industrial census) confirmed Lecco and the Lecco district as the main industrialisation centre of the region.

The concentration of work in the large factories was high¹³. The quality of the production was extraordinary for the period. «From the very beginning of the silk industry in the district the silk processors were also spinners. Consequently, they have always been aware of the great importance of preparing a pure, resilient and elastic silk thread for the operations that follow processing, so that the winding could be done smoothly and quickly, without interruptions due to excessive breakage and without tangles that would cause incalculable losses of raw material.

For this reason, costly studies and tests were performed to discover the new methods, devices and machines that continued to perfect cocoon-processing, and to seek out the quality most suitable for the thread. With the constant demands of the recently revived silk-weaving industry (which in earlier periods had thrived in the cities of Como and Milan) for new varieties of organzine and fabrics, silk-processing was itself driven to make continual improvements. All these facts went together to ensure that the greatest industry of Italy reached the high degree of perfection for which it became known»¹⁴.

In the Lecco district, out of 3,000 workers in 119 factories, 85 per cent worked in the silk industry; in the district of Oggiono as many as 711 workers were employed in the 5 silk mills (142 workers for each factory), and in Bellano the enormous silk mill belonging to the Gavazzi family was already thriving, and boasted a good 530 workers. The profitability in the silk sector was extremely high; it is believed to have been equal in value to the bulk of salaries paid out every year.

The industries in Lecco got through the great silk crisis of the '50s and '60s relatively unscathed – during this crisis the sector, its growth temporarily halted, concentrated and upgraded its forces.

«Lecco and its surrounding area are second to none in the manufacture and washing of silk.

The Gavazzi companies, Nava and Gattinoni, Gattinoni, Dell'Oro & Co., Riva, Agudio, Sala, etc., all do their own research and their own marketing, they have direct relations with foreign markets, their products (whether raw or finely-worked) are greatly sought-after, and their mills are equipped with the best and most modern machinery. Moreover, there is no lack of good workers who, as well as carrying out their work with the greatest skill, are always able to invent something new, to perfect the existing equipment, etc.»¹⁵. In 1857, the worst year in the silk crisis, the number of workers employed in the Lecco district increased.

¹³ The spinning mills employed 60 workers each and the throwing mills 25, while the iron and copper plants remained on the handicraft level, with 5 workers per factory.

¹⁴ From *Statistic Report of the Chamber of Commerce on the Surroundings of Lecco to the R. Ministry of Agriculture, Industry and Commerce*, Lecco, 1875.

¹⁵ C. Pozzoli, *Filatura dei bozzoli*, in *L'Industria*, Lecco, January 20, 1864.

«The main preoccupation voiced in Paris in 1867 (International Exhibition) was related to the silkworm-raising crisis, which had by this time been continuing for almost 15 years, and which it seemed could be resolved by using silk cocoons imported from abroad. In spite of the crisis, some companies managed to overcome the difficulties and to prosper.

This was the case of the factories belonging to the Gavazzi companies, which in Bellano and Valmadrera in the province of Como, and in Desio, in the province of Milan, were able to put into action a plan of intervention in favour of the well-being of the workers, with particular emphasis on the education of the women workers. A school was set up, in fact, with a capacity of 50 students, offering evening courses in the winter and day courses in the summer, without interrupting the factory work schedule. Four days a week were dedicated to reading, writing and arithmetic, while the other two were reserved for needlework and spool work»¹⁶.

In the '60s, the technical and financial concentration process continued and grew stronger. With the small manufacturers eliminated, financial capital was developed and the silk industrialists founded banks, shipping companies, etc.¹⁷.

In 1868 the manufacturing capacity of the Lecco area, in the silk-processing field, equalled that of the entire region of Lombardy, and just two industrialists, Gavazzi and Ciceri, controlled 30 per cent of production¹⁸. Industrialisation in the Lecco district began somewhat

¹⁶ Pietro Cafaro, *Da un sistema agricolo a un sistema industriale. Il Comasco dal '700 al '900*, edited by the Chamber of Commerce, Como, 1987, vol. I.

¹⁷ This is the case with Pietro Gavazzi (1803-1875).

¹⁸ The table shows the enormous capacity of the Lecco area, as reported in the 1860-70 statistics.

WINDING AND SPOOLING

PASSES	No. of winders	No. of spindles	Workdays per year (avg. per spindle)	Manpower		Steam horsepower, almost all hydraulic
				No. of factory workers and office workers	Average daily wage (in Lira)	
Lecco	60	15.440	207	1.065	0,61	35
Canzo	29	11.773		1.079		
Brivio	51	16.226		1.667		
Missaglia	43	15.907	207	1.588	0,61	35
Oggiono	26	13.537		1.190		
Introbio	14	4.201		412		
Totale	223	77.084	207	7.001	0,61	35

SPINNING AND THROWING

PASSES	No. of winders	No. of spindles	Workdays per year (avg. per spindle)	Manpower		Steam horsepower, almost all hydraulic	Organzines and woven cloth produced (in kilos)
				No. of factory workers and office workers	Average daily wage (in Lira)		
Lecco	59	212.940	229	1.677	175	410	317.000
Canzo	24	79.668		593			
Missaglia	11	14.353		135			
Brivio	15	17.203	229	141	175	410	317.000
Oggiono	37	79.643		587			
Introbio	2	9.024		44			
Totale	148	412.836	229	3.177	175	410	317.000

DRAWING

Passes	No. of spinning mills	No. of vats	Workdays per year avg. per vat	Manpower		Fuel		Power used (horses steam, profits)	Cocoons used (in kg)	Thread produced (in kg)	Silk waste (in kg)
				N. workers and office staff	Average daily wages (in lira)	quality	quintals				
Lecco	37	2.226	204	3.062	0,91	Coal	816.000	35	3.000.000	248.000	290.500
Oggiono	26	1.503		2.286							
Canzo	13	571		1.010							
Brivio	14	431		776		Peat	408.000				
Missaglia	13	322		595		Wood	103.000				
Introbio	-	-		-							
Totale	103	5.053	204	7.729	0,91		1.327.000	35	3.000.000	248.000	290.500

earlier than that of its English and German «big brothers».

The Gavazzis quickly became the first silk fabric manufacturers in Italy, second in Europe and third in the world. This came about in those very years when, after the Third War of Independence (1866), Italy was concluding its unification process and the whole Piedmont side of Lombardy, including the cities of Varese, Como, Lecco, Bergamo and Brescia hastened to adapt itself to a new and intense economic situation coming from abroad, determined by:

- the low cost of labour;
- widespread poverty, especially in certain seasons of the year, in the farming families, whether small owners or tenants;
- the obedient attitude of the young men and especially young women, who formed the backbone of the army of workers in the silk mills¹⁹;
- finally, the possibility of utilising the rivers and torrents, especially full in spring and summer, to generate electricity for the plants.

Silk, therefore, soon became «Brianza gold», and remained so for almost two centuries.

During these two centuries (beginning in the 1700s) the Gavazzis were the number one silk industrialists in Italy; in a period when silk constituted the most important national produc-

¹⁹ In 1880, Vittorio Ellena, having had the opportunity to study certain Italian industries through means provided by the Ministry of Commerce, wrote that they contained, out of 382,131 workers, 27.10 per cent men and 49.32 per cent women, or – excluding the boys and girls – 103,562 men and 188,486 women, divided amongst the different industries as follows:

	Men	Women
Silk	15,692	120,428
Cotton	15,558	27,309
Wool	12,544	7,765
Linen and Hemp	4,578	5,959
Fabrics of mixed material	2,185	2,530
Paper	almost equal	
Tobacco producers	1,947	13,707
Leather tanners	all men	

The same applied to the railway workshops and the rope manufacturers (Vittorio Ellena: *Statistica di alcune industrie italiane*, *Annali di Statistica*, Series II, Vol. XIII, page 32, 1830)

tion and absolutely the greatest and most important exported item, they became, in the local dialect, great *sedatt* (silk merchants).

The harvesting of silk cocoons ranked fifth in agricultural production, after cattle, grapes, wheat and corn, and was concentrated in the North of Italy.

The silk industry was even more important for the fact that it processed not only Italian cocoons but also cocoons and silk from the Near East and Asia²⁰.

In the throwing process a good amount of Asian raw silk was added to that spun in Italy.

Weaving, which was concentrated especially in the province of Como, was carried out with national and Asian raw and twisted silk.

Together, these industries employed approximately 230,000 workers.

Italy exported products for a value of 1,866,000,000 Lira. Silk exports represented 588,000,000 of this amount; a third, that is, of the entire national exportation.

It was in absolute first place, while the second place, with half the exportation value, was held by a large agricultural category that included grain, flour, pasta, rice, pulses, vegetables, grapes, citrus fruits, fresh and dried fruits, preserves, etc..

Despite these figures, Italy had fallen to third place in worldwide silk production by the beginning of the 20th century.

The great industrial structures, now abandoned, cover an area extending from the river Adda, after its outlet from Lake Lecco, to Como and southwards as far as the furthest hills of Brianza, standing as a testimony to a kind of local «gold rush»².

As described above, silk manufacture was an integrated system: mulberry tree cultivation/silkworm-raising and silk processing were spread throughout Brianza; silk-throwing was concentrated in the area around Lecco, which was to remain for a long time one of the most important European centres for this particular process, guaranteeing a high-quality product; weaving, meanwhile, was concentrated in Como.

The Lario area manufactured predominantly semi-processed goods for the markets of London, Lyons and several important German cities.

After 1855 the silk industry of the Lario area went through a very trying period, caused by an epidemic of *pebrine* or parasitic atrophy²¹, as well as the relentless competition of English and German manufacturers.

Towards the end of the century the sector was shaken by another crisis, this time caused by a mulberry tree parasite called *diapsis pentagona*. In both cases the disease was eventually overcome, but by this time silk from the Far East had swamped the market with its extremely low prices.

The Gavazzis owned a truly impressive number of silk-weaving factories²².



Machine for winding onto spools.

²⁰ For the processing of silk (which with its 60,000 tanks was undoubtedly the main industry in Italy), in addition to domestically raised cocoons, around 5,000,000 kg of dried cocoons were imported (equal to 15,000,000 kg of live cocoons, for a value which fluctuated between 60 and 70,000,000 Lira) from the Balkan Peninsula, Asia Minor, the Caucasus, Turkistan and Persia.

²¹ Caused by the spores of *Nosema bombyx*, eaten by the silkworms along with the mulberry leaves.

At this point, the Gavazzis were no longer registered, as they had been for centuries, as «weavers», which signified a handicraft trade. At the end of the 18th century and for the whole of the 19th century they were «silk merchants», the term «merchant» being closer to today's trader, or dealer, but often including a productive activity, and a financial/banking aspect at the same time.

THE GOLDEN AGE OF SILK AND THE SILK INDUSTRY IN THE ITALIAN ECONOMY

The silk industry reached its peak in the 55 years from 1861 (when Italian Unification was proclaimed) until 1915 (the year Italy declared war, together with the powers of the «Entente», against Austria and Germany, which, coincidentally, had been excellent customers for Italian silk).

During those years Italy was first in Europe in the manufacture of raw silk and third in the world, not far behind China and Japan. According to economists, the most important and most authentic Italian industry at that time was the silk industry, defined «the queen of industries». In calculating the national balance of trade, the items regarding silk (especially raw silk, organzines and fabrics, where Como led the field) were almost always on the plus side, since the exportation value exceeded that of importation. In actual fact, this represented the only receivable item at this time, as all the others were payable²³. In no other European country did silkworm-raising achieve such importance as in Italy.

Up until the year 1855, Italian silk had an exclusive on the European market; only later did the first Asian silk begin to arrive.

Lombard workers were also greatly in demand all over the world as trainers for local production. Over the 30 years following 1855, silk processing doubled.

Even greater was the development of the throwing process, spurred by the greatly increased imports and the processing of raw silk bought from Europe and Asian countries.

In weaving, the revolutionary step was the introduction (by the Gavazzis, in Desio) of the power loom.

Silk, therefore, continued to be one of the cornerstones of Italy's commercial wealth from 1867 to 1870, accounting for 32 per cent of exports. It produced a credit balance of 148 million lira, and employed 2/3 of the workers in the textile sector.

²² In Valmadrera (n. 3), Bellano (n. 2), Desio (n. 2.), Legnano, Malgrate, Morchiuso di Cassina Mariaga d'Erba, Sernaglia, Passirana, Pergine, Molino, Rassina, Albese, Oro, Inesio, Cernusco sul Naviglio (n. 2), Vendrognò, Oggiono, Parè al Lago, for the Pietro Gavazzi company, with branches at Ballabio, Bovisio, Casargo, Cernusco Lombardone, Gongorzola, Introbbio, Limbiate, Paderno Milanese, Perledo, Seregno, Varenna, Vignate; in Desio, Melzo, Sabbioncello, Besana, Verano, Brugherio, Paderno Dugnano, Cornaredo, Rovereto for the Egidio & Pio Gavazzi company; at Nerviano and Pianello Lario for Casimiro Costante Gavazzi (known as Costantino); at Calolzio Corte, Arcore, Valmadrera for the Gavazzi Ribbon Manufacturers, with branches and representatives in Vienna, Berlin, Barcelona, Constantinople, Alexandria (Egypt), Como and Milan; in Canzo, Paris, Frankfurt, Milan, Chiavenna, etc. for trade and other silk-related business. The list is probably not complete. See also chapter 13, par. «Gavazzi industries, banks and businesses».

²³ In those days, the budget was balanced through an excess of the so-called «invisible items», the most important of which were remittances from workers abroad and the money spent in Italy by foreign tourists.

In this Italian production of wealth, the region of Lombardy was the undisputed leader, with almost 30,000 silk tanks out of a national total of 50,000 surveyed after Italian Unification. While it is true that these statistics do not include the Veneto region, it can safely be said that Lombardy produced half the national total. This proportion, moreover, was markedly superior regarding the throwing process, which was even more concentrated in Lombardy. This was made possible, on one hand, by the nature of this stage of production, less restricted to the area where the raw material was localised, and, on the other hand, by the special concentration of the preliminary processes (winding, rewinding, and doubling), which took place mainly in the factories in the provinces of Milan and Como.

From 1870 to 1880 Italy held a virtual monopoly on silk.

In 1910 the silk industry in Italy, already in decline, still produced between 50 and 60,000 tons of silk cocoons²⁴, for a value of approximately 200 million lira²⁵.

The Como weaving industry continued to thrive; however, the silk-processing and throwing industries, typical of the Lecco district, began a gradual decline, which picked up speed after the crash of 1929.

Silk has significantly changed and re-modelled both the society and the landscape of the Como area and Northern Brianza, and many factories, now abandoned or adapted to other uses, are still scattered throughout the territory.

It is also still possible to come across traditional wooden hydraulic processing machines, since a large percentage remained in use for the whole of the 19th century, thanks to their low operating cost.

The last surviving large-scale silk mills in Europe are concentrated around Lecco. These imposing wooden machines, which were used for centuries, reach a height of 15 m and were powered by water wheels.

THE DECLINE

For the entire 19th century the silk-processing and throwing industry had thus played a leading role in the progressive passage from an agricultural to an industrial economy, and found in Milan its natural centre for marketing to foreign countries.

This situation shaped the capital of Lombardy into a city with commercial, financial and cultural competencies, anticipating the industrial form that it was to take on at the close of the century. Shipping companies, foreign banks which granted loans for the purchase of raw and spinning silk, gazettes and magazines, carefully following technical progress, commercial procedures and price trends, foreign manufacturers, etc. - these were all phenomena related



Machine for winding onto spools.

²⁴ From the notes of a conference held by Senator Lodovico Gavazzi in Rome on February 3, 1911 at the Italian Agricultural Society.

²⁵ Until 1898 silk exports held steady at an average level of 300-350 million Lira per year; this rose to 520 million in 1899; 683 million in 1906. In the three years from 1907 to 1910 they dropped back down to 527 million



Today, one sometimes sees rows of mulberry trees in the countryside. These ancient trees are living testimonials of the days when the region's agricultural and industrial economy was based on mulberry tree and silkworm cultivation.

slowdown, in which production capacity remained unchanged while, at the same time, the leading role that the industry had so far had over the other regional industries declined.

Although during the first three decades of the 20th century production maintained a steady rhythm, in 1907 the symptoms of the slump, which from 1929 onwards was to wipe out almost the entire Lombard silk-processing and throwing industry (leaving only the weaving industry), were already evident. The «crash of 1929» led to a fall in prices relating to all stages of production. Throughout the national and international market cocoons, raw silk and spun thread fell to such low levels that it was no longer worthwhile for farmers to cultivate silkworms, nor for the manufacturers to continue production. Neither was it sufficient to lower salaries, already drastically reduced by the slump, or to boost production with government interventions, when by this time the commercial system had forsaken its traditional interactions and was behaving anomalously.

And so, after five centuries, the silk-processing industry came to an end in Lombardy, the very region where it once enjoyed the greatest prestige.

In 1935 another crisis occurred, which finally brought the Lombardy silk-spinning industry to its knees; the last remaining silk mills are today merely examples of industrial archaeology.

Many Gavazzis managed to survive this stage, having been weavers for decades; others changed their textile businesses and began to deal in chemical and artificial fibres, such as rayon, bemberg and nylon; others still completely abandoned the sector and moved on to more promising businesses.

The banking business developed, and several of the Gavazzis launched out into the services sector. Silk had reached the end of its age, but for those who were able to understand the times, the decline of the silk industry was not a tragedy, but an opportunity to forge new, brilliant initiatives.

to the silk trade, and made it undoubtedly the most popular industry in the city of Milan.

Gradually, however, the leading role in the textile industry was taken over by the cotton manufacturers, who, unlike those of the silk sector, produced directly for the upcoming market. The textile requirements of the market, in fact, included personal clothing, especially in a period in which homemade textiles were on the decrease and the urban and working population was growing at a fairly fast rate.

Silk, on the other hand, was a semi-finished product, destined for further processing, which was carried out mainly abroad. With the expansion of the international market and the extension of the colonial regime of the main European countries, the opportunities for finding lower prices increased. For the Lombard silk-processing and throwing industry this meant the beginning of a