

languished in the chains of the Algerines in the little island of Tabarca. The king of Spain, moved by their complaints, laid before him by the Count de Aranda, ransomed these unhappy men, and found them an asyllum in a little desert island on the coast of Alicant, which upon that occasion was called, *Nueva Tabarca*, but it is feared this establishment, somewhat expensive, and besides, on a barren rock, will never prosper. Nature, by refusing it wood, stone, earth and water, seems to have condemned it to remain desert.—But to return to the Grao of Valencia. It is mostly inhabited by sea-faring persons. The road to it is, like all the environs of Valencia, for three or four leagues round it, bordered with orchards, which wear an appearance of the highest cultivation. The situation in which the whole of the capital, and the delightful enclosure is embraced in one point of view, is from the top of a tower called *Miquelet*, near the cathedral. Valencia, seen from this elevation, seems not to be more than

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a league in circumference. It is, however, said to contain from ninety to a hundred thousand inhabitants. The streets are narrow, the squares not spacious, and men, as in most manufacturing cities, are crowded together. The eye is never satisfied with viewing the prospect from the top of the tower. From this situation Valencia seems built in the middle of a great orchard, in which are dispersed a vast number of villages, that appear like a continuation of the suburbs of the city. From one part of the tower we have an extensive prospect of the sea, and the humble stream of the Guadalaviar, after having passed under the five bridges, runs to the right of the Grao, and is lost in the Mediterranean. Near the mouth of this river we discover the Albufera, a lake which empties itself into the sea by a very narrow channel \*. The lake is so near to

\* This is the lake spoken of in the preceding note, and which the duke de Crillon wishes to render useful in future to the navigation and commerce of the city of Valencia, as it has hitherto conduced to the pleasures of the inhabitants.

the Mediterranean, that in the map it appears like a bay of which the channel is the entrance; but the taste of its waters, and their course towards the sea, leave no doubt of its being a lake. The banks are covered with game and aquatic birds; and fishing and shooting upon the Albufera are the most agreeable recreations of the people of Valencia.

The tower, from the top of which this fine landscape is discovered, is remarkable for nothing but its loftiness, and by this it is prejudicial to the cathedral, which it seems to crush by its massy bulk. This edifice, which has been too much extolled, has nothing very grand in its appearance. The inside is more pleasing than majestic. The body of the building is not sufficiently elevated, and the walls, ornamented with gilt stucco compartments, seem rather those of a museum than a temple. It contains some valuable paintings, particularly those of Joanes, who holds a distinguished rank among painters of the se-

cond order. Some enthusiastic admirers of this artist (Spaniards, as it may naturally be supposed) have extolled him as the equal of Raphael. He is, in truth, like the prince of painters, judicious and correct; but how inferior is he to him in dignity and gracefulness! The most remarkable of his paintings is a baptism of Christ, which must certainly give pleasure to those who can pardon the colouring, which the dampness of the place has, perhaps, considerably injured.

The doors of the great altar, ornamented with admired paintings, must not be forgotten in the description of the cathedral of Valencia. Philip V. to whom it was remarked that the altar was of massy silver, replied that the doors by which it is shut in, appeared to him much more precious. The paintings are supposed to be by Leonardo de Vinci, or at least of his school.

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I also paid a visit to the other productions of the fine arts in the different edifices of Valencia, especially those in the college *del Patriarca*, which I had heard much praised. I found there the famous painting of the Last Supper by Rivalta, placed over the great altar, to see which the painter Carducho, undertook a journey to Valencia. Except this piece, there is nothing remarkable in the church of the Patriarch. It is indeed beautiful in its simplicity. Enormous quantities of tapers and incense are consumed there. The most sensible effects of this profusion is the dirtiness, in consequence of so much smoke, of the walls and sacred ornaments of the church. It contains a rich shrine, which is shewn with much ceremony to the curious, and even to those who are not so. It was not possible to escape the enumeration of the much more disgusting than venerable treasures it contains. We were obliged to hear, on our knees, from a young clerk, the recital of the list of bones, jaws, skulls and other parts of the human

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body, which devotion has removed from the tomb to become ornaments to the altar. From motives of politeness, we submitted to undergo this painful ceremony, and noted it in our travelling journal, to preserve from it others who, in future, may visit the college of the Patriarch.

I observed, in several other churches, paintings, by Joanes, Rivalta and Orrente, the three artists of Valencia who have acquired the greatest celebrity. I was not much surpris'd to find the best pieces of Victoria and Vergara, whom the Spaniards highly extol, feeble and destitute of expression. I was, however, tolerably satisfis'd with the paintings in fresco, with which Palomino, the same who wrote the history of the painters of Spain, has decorated the ceiling of *San Juan del Mercado*, and that of *Nuestra Senora de los Desamparados*.

Before I conclude what I have to say, relative to the sacred edifices of Valencia,

cia, I must not omit to mention the *Temple*, a church entirely modern, and built in a simple and noble taste. I saw there two small paintings by Joanes, which gave me much pleasure; one of these is a Last Supper in the manner of Vandyk, and the other a Carrying of the Cross. The latter resembles considerably the painting by Raphael, known by the name of *Pasmo de Sicilia*. The resemblance confirmed what had been told me, that Joanes had taken that painter for his model.

But what engaged my attention still more than the productions of the fine arts, were the manufactures of silk which give Valencia its reputation, and contribute to render that city flourishing. I followed the works from the cultivation of the mulberry tree to the finishing of the richest silks; and shall endeavour to give a successive description of them.

Spain, the kingdom of Valencia in particular, might have great quantities

of silk to export after supplying all the manufactures of the nation. Government seems not convinced of this truth, because it creates frequent obstacles to the exportation of silk, and when this is permitted, the duties are considerable. They amount to nine reals a quartillo, about two livres seven sols (two shillings) the pound of Valencia, which is but twelve ounces, and at the most common price is worth about fifteen livres (twelve and sixpence) raw, (*en rama*). In bad years, as in 1784, it has risen to eighty reals, or twenty livres (sixteen shillings and eightpence). There was in that year such a want of silk, that the manufacturers of Valencia asked Government permission to import to Spain two hundred thousand pound weight of French and Italian silk, duty free. In common years the pound of raw silk costs eight reals, the throwing, and dying green, blue, and other common colours; so that a pound of silk, in a state to be employed, comes to about seventy-one reals, or seventeen or eighteen livres (fifteen shillings).

It may naturally be supposed the price varies with circumstances. One of those which has the most influence is the greater or lesser plenty of mulberry leaves. These precious trees are very numerous in the plain of Valencia, and are all of the white kind (*moreras*). This distinction, which in France would be superfluous, is not so in Spain, where, in some provinces, as the kingdom of Granada for instance, the leaves of the black mulberry tree (*morales*) serve to feed the silk worms, and produce almost as fine silk as that which comes from the white ones.

These leaves are sold by the load (*carga*) of ten arrobas; the arroba of Valencia, which is about twenty-seven French pounds, cost, in 1783, about thirty-six sols tournois (eighteen pence).

The leaves of the mulberry tree are gathered once, twice, and at most three times a year; but it seldom happens that  
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the two last gatherings are either so abundant or of so good a quality as the first. The season for gathering lasts almost the whole year, and the trees are successively deprived of their leaves, in proportion to the consumption the silk worms make of the latter, and which gradually increases until the moment of their beginning to form their balls. The leaves only of the mulberry tree are plucked or beat off, the branches are spared as much as possible. Thus despoiled of its verdure, in the middle of the fine season of the year, and during the richest vegetation, it resembles trees withered upon their roots. The quantity of naked trunks which seem to be struck with sterility, and increase in number as the season advances, disfigures the plains, which in other respects are so verdant and fertile. The effect is still more disagreeable when the mulberry trees are pruned or lopped, and wholly deprived of their branches; an operation which must be performed at least every three years.

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The kingdom of Valencia has produced, in ten years, six millions of pounds weight of silk, which makes six hundred thousand pounds annually; and as all Spain produces only a million of pounds weight per annum, it appears that the kingdom of Valencia alone furnishes more than half of the general produce. The silk of Valencia is the finest in Spain, and in this respect to be compared to the best in Europe; but the spinning is still imperfect, because there are not, as in France and other kingdoms, houses where the spinners are assembled, and superintended by an inspector, who takes care that all the silks are uniformly spun. In Valencia the spinning is divided among thousands of hands; these put six, seven, eight and more ends in a thread which should have a determined number; hence the inequalities in the tissues in which these silks are employed; on which account those we receive from Spain are never made use of in any fine work. The silk used in our high priced tissues comes  
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from Piedmont and our southern provinces. For a few years past there has been less demand in France for the silks of Valencia; the repeated prohibitions of their exportation has increased the cultivation of the mulberry trees in Languedoc. The peasants, seeing the profits these trees would produce, have preferred them to others, and multiplied them prodigiously, so that in 1783, the silk in France was less dear than that of Valencia bought on the spot, deducting the duties with which the exportation is charged. A merchant of my acquaintance, who at this time had the privilege of exporting, duty-free, a hundred thousand pounds weight a year, for six years successively, could not dispose of that quantity in France in the course of the year 1783. Spain might, perhaps, supply the want of this market by increasing the number of her looms, which she does every day, and sending to her American colonies greater quantities of the produce of her industry; but her stuffs cannot be improved but in  
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proportion to the sale she can obtain for them in foreign countries, where the taste of the consumers will concur in forming that of the manufacturers.

The silks of the kingdom of Valencia are estimated, *communibus annis*, at six or seven millions of piastres (from eight to nine hundred thousand pounds sterling). At the time I was in Spain it employed not half this quantity, although there were in the capital near four thousand looms. The rest are sent out of the kingdom in spite of prohibitions, either to France by Barcelona, or to Portugal by Seville and Estramadura. At present more silk must remain in Spain; serious measures have been taken to encourage the industry which is exercised in the manufacture of them. Silk looms had been established in Catalovia, in the kingdom of Granada, Cordova, Seville, &c. in which were made handkerchiefs, ribbons, and various plain silks in quantities nearly sufficient to the national consumption. The French manufactures  
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of Languedoc, however, still found a considerable market among the Spaniards. The Spanish government in the regulation of 1778 had excluded silk stockings only from foreign merchandize sent to the colonies. But as these continue to be sent into Spain, the law was easily eluded; it was only necessary to affix to French silk stockings the mark of one of the Spanish manufactories. Interest invited to this fraud; it would have required too much vigilance, and even a species of inquisition, to have prevented it. Government endeavoured to render it uselefs by issuing, in 1785, an absolute prohibition of these articles from France; which, added to the establishment of a great number of new frames, has produced almost a total stagnation in the sales which the manufactures of Languedoc had in Spain.—But to return to the manufactures of Valencia.

There is not in this city any edifice wherein all the operations through which

which silk passes are performed. Persons who wish to see them successively must go from one workshop to another. This I did, conducted by a manufacturer, equally obliging and intelligent, named Don Manuel Foz, who had travelled a long time to acquire knowledge in the manufacture of silks, and amongst other discoveries, brought from Constantinople the secret of watering them. As a recompence for his zeal he was made inspector of all the manufactures of Valencia.

There are but few merchants and tradesmen in Valencia who are not more or less interested in the silk manufacture; this is a kind of point of honour among them. Some have but four or five looms or frames, others several hundreds.

The first operation to be performed after the worm has finished its ingenious cell, is to destroy it before it breaks through its own work to enter on a  
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new state of existence. To this effect the balls are thrown into an oven moderately heated; when the worm is killed they may be kept unspun as long as may be thought proper.

To despoil them of the net-work in which they are enveloped, they are thrown into hot water; women then select, with astonishing facility and quickness, the threads of several balls, and join and wind them thus united upon quills or bobbins. On the make of these quills depends the greater or lesser perfection in the winding of the silk. Those still made use of in Spain are very imperfect, as I shall hereafter explain.

It must first be observed, that the threads of silk ought to be drawn from four balls at least, and even in this case it is only fit for slight silks, ribbons and taffeties. Indeed, I saw a skein which I was told was made from but two balls; but so delicate a silk thread cannot be applied to any use. The threads are

commonly taken from seven or eight balls, and afterwards doubled to form one fit for use in the loom or frame.

The contexture is, as every one knows, composed of two distinct parts, the west and the chain. The west is what the shuttle draws from one side of the loom to the other, and leaves interwoven between the two plains formed by the chain. The west being more worked than the chain must necessarily have a greater consistence. To this effect the two threads of which it is composed are first twisted separately and afterwards together; but for the chain the second operation is sufficient. From this difference, the thread of the west, viewed through a microscope, appears indented, or uneven, like a cable; whereas that of the chain is smooth and flat, and consequently proper to be exposed to the light, that is to receive the brilliant lustre which is so beautiful in silks.

But their beauty depends more particularly upon the manner in which the silk is reeled or wound from the ball. This first winding is performed in three different ways, according to the quills employed in it. That which is constantly practised in Spain has this defect; the little threads of six, seven or eight balls are unwound at a time, from one single thread, and are wound on a small spindle, without rubbing against each other, which would lay the little hairs that render them rough; whence it results that the thread of silk thus formed easily frays. In the Piedmont manner of winding, each thread is joined to another, and these are never separated until they have been twisted round each other four or five times.

The third manner, that of Vaucanson, is still an improvement upon the latter. Upon the quill or bobbin which he invented, the two threads of silk, after their first twisting, join a second time,

time, for the same purpose. This operation is called the *double crossing*.

If these threads, thus upon the spindles, be destined to the weft, they are placed perpendicularly upon a machine of several stories, where they are separately twisted; they are carried hence to another machine, where they are twisted together, after which they are fit to be used in the loom. Those for the chain, as I have before observed, are not twisted until they have been joined together. These machines, so precious to the arts, which save the labour of so many hands, are known at Valencia, and Talavera de la Reyna. I had already seen in Talavera, a single wheel from which a thousand of these little spindles upon which the twisted silk threads are wound, receive their motion; but those I saw at Valencia were less, because this city contains not, like Talavera, a royal manufactory confined to one edifice. Each manufacturer there finds, divided into different quarters, workmen and machines

necessary to his operations, and prefers those most fit for the purpose.

Nothing is more simple than the management of these twisting machines when the wheel has put them in motion. Women and children guide the operation of the little perpendicular spindles; the moment they meet any obstacle, a touch with the finger sets them again at liberty. If one of the threads break, the damage is replaced in the twinkling of an eye; their fingers, from long exercise, are astonishingly expert in the work, seize the two ends with a quickness bordering upon prodigy, unite them by an imperceptible knot, and the spindle immediately regains its motion with the rest.

The thread of silk, before it is twisted double, undergoes an operation which I must not omit to mention. Whilst it is in skeins, it is spread over a wide and shallow caldron, in which several viscid ingredients are boiling; and the steam  
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from which prepares the threads to adhere to each other. This operation is called, by the French manufacturers, making the threads, *passer a la breve*.

The skeins are carried hence to the twisting machine. The silk, after coming from this operation, is called *organfin*: it is in this state only that it can be brought from Piedmont, where the twisting was better performed than elsewhere, until it was improved by Vaucanson\*. This able mechanic has united all the operations performed in the manufacture of silk. His method is exclusively followed at Lyons: but his quills for double crossing can serve only for the silk of the country, because foreign silk, which for the most part is used in these manufactures, to be exported must be reduced to organfin.

\* It must be remarked, that the silk wound and twisted after the manner of Vaucanson, forms a texture more even, and one third stronger than the textures of the ordinary silk.

Spain has in this respect a great advantage over manufacturing nations; she has more silk than she can employ, and might manufacture it in the best manner possible, yet still she continues her defective method. Government has endeavoured to employ the only means capable of producing a change of this kind; means which are slow but persuasive. In 1781, a French merchant established at Madrid, engaged with the count of Florida Blanca, to furnish, first to the manufactures of the kingdom of Mercia (the country of the Spanish minister) afterwards to those of Valencia, and successively to others as they should require it, a hundred reels or frames to wind the silk, according to the manner of Vaucanson; and in return the count granted the merchant the privilege of exporting, duty-free, six hundred thousand pound weight of silk in six years. This measure may, however, be ineffectual for some time from the idleness of the Spanish manufacturers, who will not willingly make use of a closer and finer silk

filk, because it would be necessary to weave it with greater care, and because the thread of this filk contains three ends instead of two, by which means the labour is increased without a proportionable increase of profit; for which reason French hands were obliged to be employed in the first experiments of this kind.

Their success cannot be expected to be great, if we may judge by a manufacture established a few years since at La Milanefa, a league from Valencia, by an intelligent manufacturer of the name of Payessa. He introduced there the method of Vaucanson; and, when I visited his manufactory, he had no prospect of recovering what he had advanced to form it. He scarcely ever employed two hundred persons; these were confined to winding and reeling the filk, to bring it to the state in which it is called *organfin*; and, thus prepared, it was from fifty to sixty reals a pound

according to the Spanish method, and consequently found but little sale.

I shall not enter into a detail of the dying or manufacturing of silks. The first is easily conceived; the other difficult to comprehend, and much more so to explain without the assistance of plates. I shall only observe, with respect to the first, that all the silks are dyed in the skein, and immediately afterwards put upon the loom. It sometimes happens that they are dyed in the piece, but this is only when they are stained, or when the dying in the skein has not well succeeded. When I was at Valencia there were a hundred and seventeen master dyers, but some of them wanted business.

The manufactures in which the people of Valencia succeed best, are mostly those of plain silks: fine damasks worked with large flowers, to hang apartments, are made there in great perfection; but, in general, these undertakings depend  
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upon the orders from the court, the capital and the provinces. The patterns of France are followed as closely as possible through all their variations, and those invented in Spain, more or less, resemble the former. The academy of fine arts at Valencia, however, is earnestly endeavouring to encourage pattern-drawers; and for this purpose, there is a school which has already produced several of distinguished abilities; among others a young man of the name of Ferrers, who died a little before my arrival at Valencia, some of whose groups of flowers I saw and could not but greatly admire.

But what the Valencians excel most in is the art of watering the silks (*dar las aguas*); which M. Foz has brought to the greatest perfection. He very clearly explained to me the whole of this operation, which consists in rolling a cylinder upon the silk intended to be watered: the cylinder is pressed by an enormous weight moved by a great round stone,

stone, which draws a lever in its circular motion; the silk is folded in the manner of an outer lattice window-shutter when it is shut, and these folds must be frequently varied that the undulations may be equally divided. M. Foz observed, that the distribution and form of these were almost the effect of chance; but he proved that they might, in some measure, be influenced by wetting the silk in certain places, and in a particular manner; and in this consists the secret of which he alone is the possessor in Spain. The excellence of his method is proved by the beauty of the waterings which come from his presses: he enabled me to judge of it by comparing the blue ribbons of the order of Charles III. watered by him, with those of the order of the Holy Ghost; I was obliged to confess that the latter gained nothing by the comparison.

The Exchange of Valencia is one of the remarkable edifices of that capital. Here the merchants, traders and manufacturers

facturers assemble to learn the daily price of silks, as in other places of the price of stocks.

Valencia has also had, for a few years past, a patriotic society, the principal cares of which are directed to the improvement of the cultivation of mulberry trees, and the quality of silks: it has already produced several volumes of memoirs full of useful papers. The encouragement it gives to arts is not confined to the manufacture of silk. Towards the end of the year 1786, it gave a premium to the inventor of a new frame for the manufacture of silk, cotton, and worsted stockings at less expence than according to the common method; as also a second premium to a dyer for the invention of a simple and ingenious machine, which, with great facility, reduced to powder the wood of Brazil and Campeachy; and a third to the inventor of a machine for dressing flax. It is particularly in countries which are not populous, and where the arts

arts are as yet in their infancy, that it is especially useful to save labour, by simplifying the workmanship of manufactures.

At Valencia there is a public library; that of the archbishop's palace; it appeared to me to be but little frequented. Manufacturing cities seldom abound in lovers of science, and the belles lettres; the cultivation of these supposes leisure; useful arts require a continued assiduity. Valencia, however, is the country of Gregory Mayans, who died a few years ago, leaving behind him a reputation of vast erudition, which extends beyond the limits of Spain, and to which M. de Voltaire did not disdain to do justice on various occasions. The library of the episcopal palace contains a collection of statues and antique busts, collected by the nephew of the late archbishop. The scruples of the present prelate have diminished the value of the collection by mutilating some of these monuments. The austere morality of the archbishop  
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has deprived this capital of all public amusements. The theatre of Saragossa having been burned a few years ago, the prelate, a declared enemy to all profane pleasures, obtained a promise from the court that the representations of the drama should never more pollute his see. The people of Valencia are displeas'd with him; and, according to what I heard of his character, he appear'd not to me to join to the advantage of edifying by his virtues the more rare talent of rendering them beloved.

My speculations and amusements were not confin'd to this capital; I visit'd a part of its environs. The most agreeable of my excursions was to the charming retreat of a canon of the cathedral, Don Pedro Mayoral. This ecclesiastic, a well inform'd man, and simple in his manners, has conciliat'd a philosophical life with the enjoyments of the beauties of Nature that surround his habitation, which is situat'd in the village of Benimamet, half a league from Valencia,

lencia, upon an eminence, in the middle of a garden, in which the orange and lemon trees perfume the purest air. The verdure of the walks, the variety of the prospects, and the varied fertility on every side, make it a most delicious abode. The reception I there met with added to the charms of the place. Our dispositions naturally take a tincture of the objects by which we are surrounded. How is it possible to perceive a contracted brow in the midst of a beautiful landscape, and in the most temperate climate? The canon exhibited, both in his mind and person, the reflection of that serenity which reigned around him. In imitation of Nature, which had abundantly bestowed upon him her gifts, he was profuse in his polite attentions; he complaisantly accompanied me to view the treasures of his garden, and would not be satisfied with confining my enjoyment of them to bare contemplation. He had prepared a sumptuous collation, of which the principal riches were produced by this land of promise. Among other foreign

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reign trees, the cultivation of which occupied his leisure, he shewed me that which produces the *chirimoya*, the American fruit so much extolled for its fine flavour, and which, it is said, has never succeeded in Europe. He proved to me the contrary; the trees had still some remains of fruit, with which he gratified my curiosity. The *chirimoya*, which was as big as a middling pear, was divided into eight or ten parts, that each of the guests might taste it. The pulp is whitish, and contains five or six flat black kernels; its taste resembles those of an apple, butter and a nut united; but with this there is a certain insipidity which, if the fruit merits its reputation, it certainly has not in its native soil.

Benimamet is distant a quarter of a league from Burjasot, another village which stands on higher ground, and in the church of which lies interred Mademoiselle l'Advenant, a celebrated actress, the *le Couvreur* of Spain\*, but whose remains

\* Mademoiselle *le Couvreur*, a famous tragic actress in France, who died a few years ago.

were not so severely treated as those of the French Melpomene. At Burjasot I was shewn, as some of the curiosities of the country, the *Sichas*, or *Silhos*, which are large holes, dug vertically, and lined with hewn stone. They are the work of the Moors, who used in them to store their grain. The modern inhabitants of Valencia employ them for the same purpose. I had the curiosity to descend the deepest of these Silhos, but had nearly found reason to repent of my courage. The descent was easily enough effected with my feet in a straw basket, and my hands fixed to a cord which was gradually let down. I got to the bottom without effort or danger; but when I was to re-ascend, though my heart did not fail me, my head was ready to turn. I had no sooner been raised about thirty feet, than I had nearly quitted my hold; happily I cried out in time to be let easily down again. Had not my cries, which announced fear on my part, and caused it in those whom I had left above, been immediately complied with, most probably