

weaver was only allowed to use material native to his own province, and it was usually illegal for him to mix fine and coarse threads. As a rule a weaver was only allowed to buy as much raw material as would meet his own requirements, the intention being to prevent the weaver from trading in raw materials.

There were also important decrees governing the use of dyes. If a piece of pomegranate skin was found in the house of a weaver, he was sentenced to thirty days imprisonment and heavily fined. One third of the fine fell to the town, one to the judges who tried the culprit, and the remainder to the Veedor who had indicted him or to the person who drew the Veedor's attention to the matter. There were not only dyes which were absolutely forbidden, but also others which might only be used in certain quantities. Only two ounces of iron vitriol and gum arabic were allowed to one pound of silk, and not more than ten ounces of foreign gall-nuts. It was a favourite practice of the dyers to mix their dyes with salt and oil, in order to increase the weight of silk fabrics which were sold by weight. The Veedor always made his visits unannounced, and expected to find six vats of different dyes.

In order to make the Veedor's task easier, weavers whose workshops were also used for dyeing, were forbidden to work after midnight. It sometimes happened that the Veedor found the door locked before midnight, or that he was forcibly ejected by a weaver who regarded his trade as his own affair and not that of the authorities. In such cases very heavy punishments were meted out.

The social as well as the business life of the Spanish weaver was governed by regulations. Children employed in the silk trade enjoyed special protection. When under twelve years of age they were not allowed to work more hours per day than were covered by a wage of $2\frac{1}{2}$ reals. Wages were computed according to the number of thousand cocoons unwound. For women employed in the industry there were also special regulations. Women were forbidden to weave except in their own homes. A woman who went every day to a workshop where she worked together with men not related to her, would affront the Spaniard's sense of decency. The law was evidently intended to induce the manufacturers to employ women in home-weaving. This conception of what is seemly conduct for a woman is—like

Queen Isabella (1474-1504) receiving Christopher Columbus. This 19th century painting correctly shows that in Isabella's day dress already showed cut and patterns of the Renaissance. Isabella's husband, Ferdinand, is standing beside her. Photo: Ruiz Vernacci, Madrid.



silk-weaving itself—a heritage of the Moors. The law, according to which a master was to pay for nursing and other expenses of a sick apprentice, and in case of death to defray the costs of burial, though passed in the Middle Ages, is reminiscent of modern Health Insurance. If a weaver discharged an employee, he had to give account of the matter to the guild, and state the reasons for the dismissal.

Changes in the Style of Silk Weaving in Christian Spain

The close of the 15th century was for the Spanish silk industry a period of artistic as well as organisatory innovations. The patterns of Spanish silks became European.

In the early Middle Ages the ornaments even of the products of Christian Spain had been Moorish in those districts where Mohammedan and Christian weavers worked side by side. That is easily understood if one considers the cultural conditions of the Iberian peninsula. Though in retrospect the co-exist-

The Infanta Isabella Clara Eugenia, a daughter of Philip II (1555-1598). Portrait by Felipe Liaño (died 1625). Note the large-figured pattern of the dress. Photo: Anderson.



Mariana of Austria at prayer. Painting ascribed to Velázquez (1599-1660). The bench at which she is kneeling is covered with a richly patterned silk cloth and a cushion of the same pattern. Photo: Hanfstaengl.

ence of Moorish and Christian kingdoms appears as a succession of wars, there was lively intercourse between them during the brief periods of peace, the Spaniards being the ones who profited most thereby. It was the Moorish universities in particular which attracted visitors from Spain and elsewhere. To what extent Spain was dominated by Islamic culture is shown by the fact that in the 11th century the resolutions of an ecclesiastical council were translated into Arabic, as the Spanish clergy in the frontier districts understood Arabic better than Spanish or Latin. Furthermore, the Spanish Christians were frequent visitors to Moorish markets. Al Shakandi, writes: "...Almeria is the greatest market of Andalusia. Christians of all nationalities come here to buy and sell goods. Silk robes of most gorgeous colours are made at Almeria." It is, therefore, not surprising that the weavers of Christian Spain, who, moreover, employed Moorish craftsmen, took over the highly developed Moorish designs and ornaments. The small Christian states of Spain had very little art of their own, they were provincial in the extreme, and could not compare with Gra-

nada, saturated as it was with the cultural traditions of the ancient Orient. They were, however, open to cultural influence. Such influence was forthcoming in abundance, at first from Granada, and after the fall of that kingdom from the East and North East. With the end of the 15th century a "European" era dawned in Spain. From Italy, France, and especially the Netherlands fresh artistic and intellectual life poured into Spain. Through the medium of the great masters of the Renaissance, European art developed a brilliant, all-prevailing style. European artists were in demand everywhere. Spain, too, was visited by artists from Italy and the Netherlands. When Isabella's only son married a daughter of the Emperor Maximilian, and her daughter Joanna married the Emperor's son, Spain became still more closely linked to Europe. And when the son of Joanna and Philip the Fair came to the throne, uniting Spain with the widespread Habsburg lands, the Pyrenees ceased to be a barrier at all. Spain was united with Austria, the Netherlands, and with parts of France and Italy. Not only artists formed a connecting link between the various parts of this great Habsburg empire, a lively commercial exchange set in, which helped to bring new designs to Spanish silk-weaving.

In Spain as elsewhere the new styles are known by the names Gothic and Renaissance. They find expression in the designs of silk fabrics as floral patterns which are not stylized like the geometrical motives of the Moors, but show their closeness to Nature. The fabric is no longer covered with an intricate network, but ornamented with large individual figures.

Spanish Silk Embroidery

Silk embroidery began to achieve popularity during the latter part of the 16th century. In place of robes falling in soft folds, stiff, formal dresses were worn. Embroidery was an excellent means to stiffen wide skirts, doublets, sleeves, and cloaks. The Spanish dress of the late 16th century aimed at imparting an air of formal dignity to its wearer. The cut of the high collar, which grew ever higher, made it necessary to keep the neck very straight and stiff. The heavy silk clothing, stiff with embroidery, allowed of no rapid movement. Embroidery increases the lustre of the silk, and adds variety to its pattern. The wearer of a Spanish costume might well appear to himself and others as a man raised above the common run of mortals, a "conquistador". This fashion, which reigned supreme during the period of Spain's greatest power, spread all over Eu-

Funeral of the Count d'Orgaz. Painting by Greco (1547(?) to 1614) in the church of St. Thomas, Toledo. Section. The gorgeous silk vestments of the clergy form a striking contrast to the sober "Spanish costume" of the nobles. Photo: Anderson.





Spanish lady and her dueña on their way to Mass. According to Spanish custom a lady does not go out unaccompanied. Engraving from Breton "Spain", 1817.

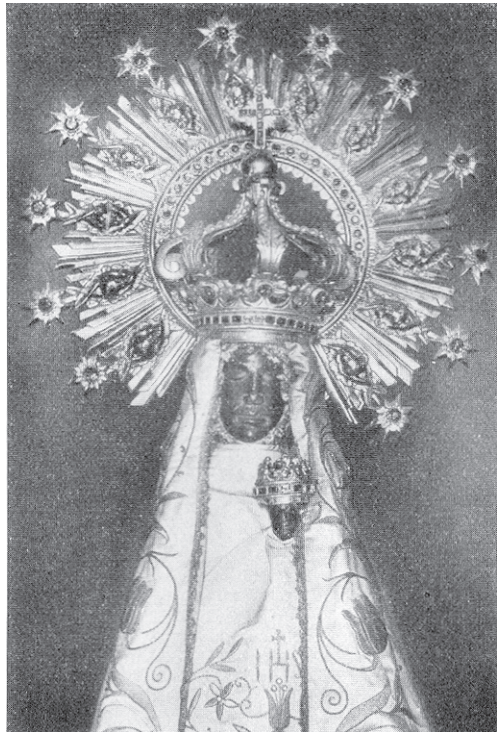
rope; Spanish collars and Spanish mantillas were worn everywhere. On regarding the gorgeous dresses seen in the portraits of Velazquez, one is struck by their resemblance to some Spanish figures of saints. To this day it has remained customary in Spain to dress carved figures of saints in real fabrics, to put wigs on their heads, and to cover them with jewels. This custom owes its origin not only to the Southerner's love of colour, but also to the religious fervour engendered by the age-long struggle against the Moors. In several Spanish cathedrals statues of the Virgin have been preserved which are clad in costly silk trimmed with precious stones and real pearls. The Madonna of the cathedral of Toledo is a unique example of this, the figure is swathed in twelve yards of cloth of silver decorated with a floral pattern of gold and jewels. The total weight of the jewels used for this purpose is said to amount to three pounds. Other figures are wrapped in ordinary silk. Something of the rigidity of these wooden figures clad in silk is inherent in the costumes of noble Spaniards of the second half of the 16th century.

The nobles were not content with wearing silk themselves; they also lined their coaches

with cloth of gold (velvet or damask were considered plain in the coach of a nobleman), ladies had sedan-chairs lined with silk. Large quantities of silk were used by the Church for vestments, etc. (cf. title-page). On every holiday or feast-day there were special vestments and altar-coverings of silk. The Countess d'Aulnoy, who travelled in Spain in the 17th century, made reference to "the eternally embroidering ladies of the court". Following the example set by Queen Isabella, who had embroidered many vestments and altar-cloths, and who even after death remained famous for her piety, the Spanish ladies executed many similar pieces. They embroidered cloths both for sacred and secular purposes. Whilst the princess of Monteleon was embroidering the pillows of her bed with gold thread, another lady was making an embroidered silk cover for the Sacrament, to protect it when being taken to the sick in bad weather.

Whereas from the 16th century onward silk-weaving in Spain was chiefly industrial, and subject to many vicissitudes, embroidery maintained almost uninterrupted popularity.

Robed figure of the Virgin from a small village in the Pyrenees. Such robed statues of saints are very common in Spain. Photo: Zerkowitz.



In the 16th century it became a fashionable accomplishment which was of considerable influence on dress styles. In 1662 Philip IV forbade embroidered dress, and the craft receded somewhat into the background, to be revived again a century later under French influence. The new embroidered dresses were, however, no longer Spanish in style, but showed the influence of French rococo. Paris had become the dictator of European fashions.

Even in this present age of mass-made clothing, embroidery still holds its own in Spain; the embroidered shawl and bedspread have remained popular. In many Spanish villages the bride (“novia”) embroiders a white wedding-shirt for the bridegroom (“novio”). The needle-work of the village of Lagartera near Madrid is unique. The women of Lagartera wear gorgeously embroidered clothes, and the village lives by their needle-work. Lagartera is a village of voluntarily unemployed men, for the women and their work provide the necessities of life; the men wind wool and silk, and watch the women at work. Once a week the women go to Madrid, where they sell their brilliantly colourful needle-work. Their red flannel skirts and embroidered bodices impart an unexpected touch of colour to the streets of the city.

The Decline of Silk Weaving in Spain

The union of the several Spanish kingdoms and the rise of Spain to a world-power took place in the space of a few decades. Isabella laid the foundations of this power; her grandson and successor, the Emperor Charles V (as King of Spain Charles I), was able to say: “In my dominions the sun never sets”, but even during his lifetime the vacillating policy of the Government showed that Spain was a ship without a helm. The colonies were insatiable buyers of goods, and Spain sought to meet the demands from across the seas, and to secure the profits for herself. Foreigners were forbidden to trade with the Spanish colonies, though Spain alone was not able to meet the requirements of her overseas dominions. America’s great need was grain, for the colonies neglected agriculture in their eagerness to find gold. For that reason, laws were passed in Spain which promoted agriculture at the expense of grazing-land. The result was that flocks diminished, and the wool industry suffered considerable harm. But even this policy was not pursued systematically; laws



Silk fabric with pattern sewn on. Such fabrics were frequently used in Spain in the 16th and 17th centuries as mural hangings and for covering fireplaces and chairs. Victoria and Albert Museum, London.

promoting agriculture and laws promoting wool-growing alternated, with the result that in the long run both industries were check-mated.

Laws against imports of foreign silk and against the extravagant use of silk in dress were repeatedly passed. At the end of the 16th century these laws became a matter of urgency. The wearing of gold cloth and brocade was categorically forbidden. This decree was, however, not applied universally. Silk dress was permitted to men who served in the wars, as vestments of the priests, and to women who were “publicamente malas”, i.e. prostitutes. The last clause of the decree served to make the wearing of silk distasteful. These laws restricting the wearing of silk dress were passed because the tide of imported silk threatened to become a flood. Foreign silks were cheaper than those of Spain, and the increasing burden of taxation caused a constant rise in the price of Spanish textiles. The ten per cent tax imposed by the Crown was only one of many other dues, among which those paid to the clergy took a prominent place so that, for example, a pound of silk sold at the equivalent of seven shillings in modern English

currency, carried a burden of about five shillings in taxes. The clergy, who had acquired a strong position during the struggle against the infidels, had considerable influence on political affairs. The "Courts of Inquisition" set up by Isabella during the Moorish wars were retained after the union of Spain, and paralysed with their arbitrary harshness the enterprise of many industrialists.

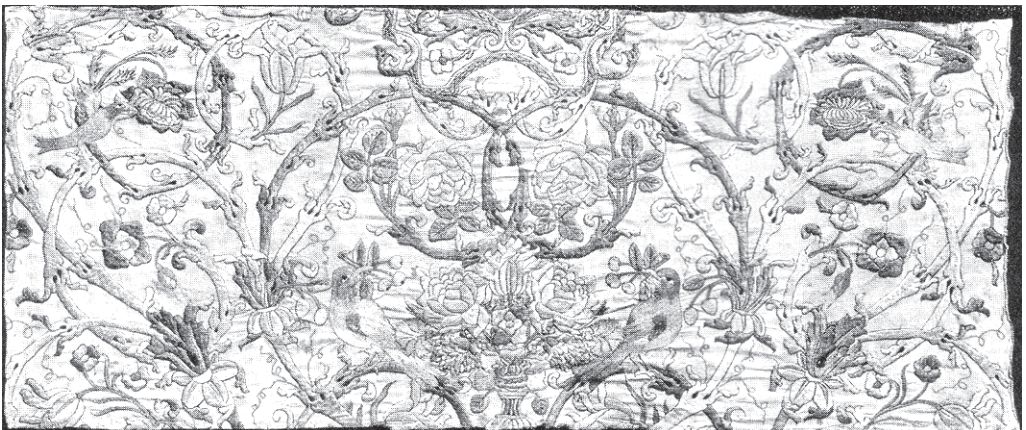
Early in the 17th century already, the silk-manufacturers began to reduce their production, some preferring to close down altogether, as they were no longer able to produce silk at the maximum price fixed by the Government. The members of the Spanish parliament, in which no manufacturers were represented, stood for the consumer; they considered that no tax was too high for the silk-manufacturers, and permitted at the same time the import of cheap foreign silks. The banishment of the Moriscos, skilled craftsmen and excellent business men, in 1609, the emigration of enterprising men to America (cf. p. 704), all helped to weaken the country economically. These various factors led to a disastrous decline of Spanish silk-weaving. In 1601 130,000 weavers worked at 16,000 looms in Sevilla; in 1659 all of these looms with the exception of 59 were silent. The population of Sevilla had sunk to one third of its former number. During the first quarter of the 17th century, it occasionally happened that Spaniards left their homes for the sole purpose of avoiding tax-paying. If a man was in arrears with a single tax, he was lost, for the proceedings against tax-defaulters invariably resulted in a whole series of other payments.

Towards the end of the 17th century Charles II (1665-1700) made an attempt to save the silk industry. In November 1683 the silk manufacturers of Toledo, Sevilla, Granada, and Valencia met in Madrid to discuss the situation. They decided to raise the quality of silk by increased strictness of the *Veedores*, by a renewed decree against foreign silk imports, and by a reduction of taxes. As a result of this reform there was work for 405 looms at Sevilla in 1713, and in 1736 the number was 1,000. The war against England in 1739, however, brought another set-back to the industry. The experiment of calling in a French expert, Jean Roulière of Nîmes, brought no lasting improvement.

In 1747 the "*Compañía Real de Comercio y Fábricas*" (Royal Trading and Industrial Company) was founded at Granada, the birthplace of the Spanish silk industry. The grandiloquent title of the company was not justified by the facts. In no European city were there more beggars than in Granada. Where formerly 15,000 looms were operated, only 600 remained, and whereas at one time a million pounds of silk were spun in a year, a tenth of that amount was now more than sufficient. The new company, the object of which was the revival of the silk trade, had a capital of half a million pesos, and issued shares at 200 pesos each. Being founded in the king's name, the company enjoyed various privileges, e.g. it was exempted from taxes for twenty years. This advantage paralysed private enterprise and competition.

In 1762 a book was published in London under the title "A New Account of the In-

Spanish silk embroidery of the late 17th century. The pattern contains a variation of the motive of the Tree of Life between two birds. Victoria and Albert Museum, London.

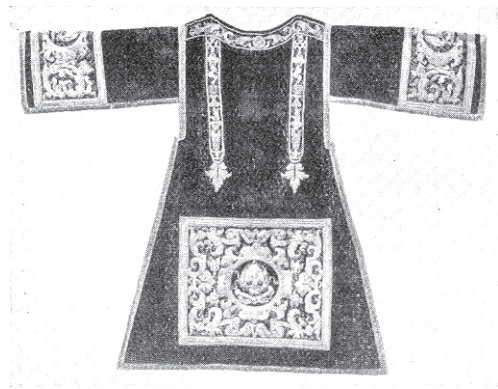


habitants, Trade and Government in Spain". England followed events in Spain with great interest, for the decline of that country hastened England's rise to world-power. An English traveller of 1762 wrote: The Spanish factories are insignificant... by reason of the Spanish indolence and inactivity. They are constrained to buy foreign goods, very few of them are put to a trade or business, as such occupations appear to them incompatible with their honour. They content themselves with buying goods from abroad, and reselling them to America. There has long been no sound economy in Spain.

The Spaniards of the 18th century preserved the customs and opinions of a by-gone age; they could not adapt themselves to changed circumstances. About the middle of the 18th century the number of people in Spain belonging to religious orders was estimated at 200,000, and a much greater number of people were cut off from business life by the fact that nearly every second Spaniard, considered himself a "hidalgo". The word is derived from "hijo de algo", literally "son of somebody", a man of consequence, an aristocrat, a descendant of the conquistadores.

To another English traveller named Townsend, we owe the report of a second attempt to revive the silk industry, made at Toledo towards the end of the 18th century. The Archbishop of Toledo set up a silk-factory in the Alcazar, the famous palace. Townsend remarked: The Bishop of Toledo has filled the once splendid palace with beggars. They weave... but there are no purchasers for their goods.

Weaving went on in many places in Spain; in Valencia many people made it a point of honour to have a loom in the house.



Embroidered dalmatica of black velvet. Made in Spain in the 16th century. Victoria and Albert Museum, London.

But all this was without system, discipline, or artistic sense. Weaving on principle, because weaving was an old Spanish tradition, was typically Spanish, as was the individualism of this weaving. At Barcelona, silk stockings were the principal articles woven, but they were irregular and shapeless, very far removed from those red and blue stockings made at Valencia in the 16th century, which were considered fine enough to be sent as a present to Mary Queen of Scots. In spite of the irregularity of quantity and quality of the goods produced, an irregularity not confined to the silk industry, Spanish trade with the Americas and the revenue from the gold mines averaged about £ 5000,000 per year in the middle of the 18th century.

The French invasion of 1808 was a severe blow to the economic structure of Spain. In 1820, however, there were already signs of a revival in the silk industry, this time in the region of Valencia, of Murcia, and in Catalonia, which was soon to become the most important textile district in Spain.

Migafar P

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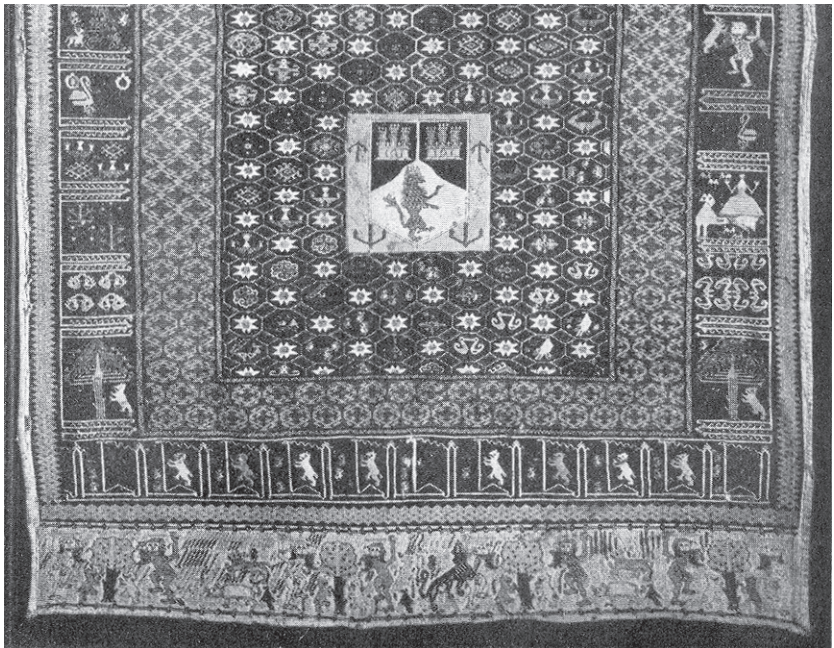
Tapestry Weaving

The woven tapestry takes a prominent place among Spanish textiles. The kings of Spain amassed a collection of tapestries which is almost without peer. The passion of the Spanish sovereigns and—following their example—that of the Spanish grandees for collecting tapestries found its first expression in large purchases from the Netherlands and France, where tapestry-weaving flourished greatly during the 15th and 16th centuries (cf. Ciba Review No. 5, "Tapestry"). Charles V not only bought tapestries, but commissioned the weavers to make them for him. A series of mural hangings, depicting scenes from the "Conquest of Tunis" was designed by the Dutch painter Jan Vermeyen (1500-1559), and woven at Brussels, the necessary raw materials being brought from Spain. The preparation of the silk for these hangings was undertaken by a number of specialists at the express command of the emperor. They spent two years, seven months, and twenty-five days at Granada while engaged in this task. The silk had to be dyed in 19 colours, and there were several shades of each colour. One hundred and sixty pounds of silk were used in the effort to achieve one particular shade of

blue. Finally 555 lbs. of satisfactorily dyed silk were selected, valued at 6637 fl. and sufficient to provide work for the tapestry weavers of Brussels under Master Pannemaker for a period of five years. For every ell of the tapestry which was completed the weavers received the sum of 12 fl. The series when completed comprised 1246 ells (an ell was appr. 30 ins.), and cost 14952 florins in weavers' wages alone. Charles V expressed his satisfaction with these tapestries by granting Pannemaker a pension of 100 florins yearly. Philip II, the son and successor of Charles V, was also a collector of tapestries; his liking for this branch of the textile crafts found particular expression during a journey which he made to France and to his Italian possessions.

In 1624 a number of Flemish tapestry-weavers settled in Castile under royal protection. They wove the traditional biblical and mythological scenes, and also a history of Don Quixote.

A new era of Spanish tapestry-weaving began, when the Spanish artist Goya (cf. p. 730) was commissioned to design mural hangings for the royal family. Goya's genius and his love of realism led to a break with the tradition of mythological figures. Scenes



Section of an Hispano-Moorish pile carpet with small patterned back-ground and coats of arms. The border is enlivened by a series of animal figures. The Spanish Art Gallery, London.



Section of a Spanish carpet of the late 15th century. Note the long narrow shape. The pattern shows the transition from the Moorish to the Christian style. The Spanish Art Gallery, London.

from daily life, Spanish girls, soldiers, children at play, even bull-fights, were reproduced.

The tapestry-weaving studios of Sta Barbara in Castile became famous, and existed until the French invasion of the early 19th century and the subsequent civil wars put an end to the courtly art of tapestry-designing.

Mural hangings, serving as they did to give an effect of dignity and magnificence, were admirably suited to adorn the palaces of Spanish princes and grandees. Their frequency in Spain has, however, probably another reason. Spanish houses, including those of the great, were built chiefly to meet the requirements of the summer season. In the large rooms with their paved floors and sometimes tiled walls, inadequately heated by braziers or open fires, winter made itself unpleasantly felt. Therefore mural hangings probably served as a protec-

tion against cold, which could be removed with the advent of hot weather. Tapestries are said to have been used in Spanish castles not only as wall-coverings, but also to divide large rooms. Tapestries and rugs served in addition to decorate balconies on the days of processions of the Church. The great ladies watched the faithful file past from the seclusion of their balconies; they appreciated a decorative setting to their own beauty, which at the same time did honour to the pious occasion.

Carpet Knotting

Like silk-weaving in Spain carpet-knotting originated in the Moorish kingdom in the South, but it was never extensive. When the betrothal of Princess Eleonore of Castile and Prince Edward (afterwards Edward I) of England was being negotiated in London by Spanish envoys, the silks and carpets of the Spaniards at first aroused scornful criticism.

Flemish tapestry from the Cathedral of Saragossa. The Flemish tapestries had an important influence on the development from the small geometrical patterns of the Moorish hangings to the large-figured fabrics of the Christian period. Photo: Mas, Barcelona. (Warburg Institute, London.)





Spanish pile carpet, early 18th century. Coat of arms as principal motif. Victoria and Albert Museum, London.

The Spaniards hung their rooms with silks and rugs. But when Eleonore entered London in state in October 1255, the houses were hung with Spanish rugs. These were probably the first textiles of the kind to be seen in England.

In the 12th century the Mohammedan geographer Edrisi wrote of Alicante, where particularly fine woollen carpets were made, that the air and water there were especially suited to the requirements of the trade. In spite of such stray pieces of evidence, it is possible that carpet-weaving was not known in Spain until comparatively late, i.e. in the 14th century, having been introduced from western Asia. At the beginning of the 15th century, weavers are said to have worked at the court of Navarre, in Christian Spain. The Spanish carpets which have been preserved can hardly be older than the 15th century. They usually have a back-ground of small geometrical figures and one or more armorial shields.

No adequate explanation is forthcoming for the fact that Oriental silk-weaving became so widespread, while carpet-knotting remained more or less sporadic. Maybe the predominantly warm climate was not favourable to the use of carpets as floor-coverings, though the lighter texture of the woven tapestry made it suitable for a wall-covering. It is also probable that the rich figural and scenic patterns of the French and Flemish tapestries was more to the liking of the Christian Spaniards of the 16th–18th century, the principal users of mural hangings, than the geometrical patterns of Oriental carpets.

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The Effect of Catalysts in the Chemical Processing of Textiles

The term catalyst is applied to a substance which is capable of accelerating or retarding the rate of a chemical reaction without itself undergoing change. Such catalytic substances are very often used in textile processing. There are, however, less desirable phenomena due to minute quantities of catalytically active substances which occur in textiles. Traces of iron (from the kier) or copper present in pieces undergoing treatment with per-salts such as perborate, or with hypochlorite, can act as very energetic oxygen carriers in the formation of oxycellulose, and thus cause severe damage to the material.

In addition to such unintended catalytic action, catalysts do, as already stated, play a very important role in textile processing. The extremely effective catalytic action of vanadium salts is made use of in certain oxidation processes, particularly in cases of aniline black application when a steaming operation has to be avoided. By using chlorates as oxidising agents in the presence of these salts it is possible to start the formation of aniline black, and even to complete the reaction at ordinary temperature. Of similar character is the action of ferri- or ferrocyanides, which have long been extensively used as catalysts for aniline black, both in dyeing (Prudhomme process) and calico printing. Soluble copper salts may also act as oxygen carriers, though their use is restricted to dyeing processes where a steam development is to be avoided, where the temperature required to inaugurate the formation of aniline black may not exceed a maximum of 60–70° C. Insoluble copper sulphide can be used as a catalyst with colors which require steaming, as there is no danger of tendering the fiber.

In indigo discharge printing with bichromate and acid in the so-called chromate discharge process, the oxalic acid added to the acid bath acts as an accelerator

in the oxidation process. It is doubtful whether the oxalic acid in this instance really acts as a catalyst, as repeated investigations into the action of this organic acid have never completely explained its function.

The fact that the effect of Aktivin (p-toluol-sulpho-chloramine-Na) can be greatly intensified by iron salts has led to a discharge process for indigoid dyed shades. The dyed material is printed with tartaric acid and ferric chloride, and then passed through a hot Aktivin bath, when the color in the printed portions is promptly discharged.

If the catalyst in oxidation discharge processes should have an oxygen carrying action, then in the case of discharges based on reduction the catalyst should possess a hydrogen carrying effect. It will be recalled that in the early days of discharge work with the stabilized hydrosulphite compounds, Naphthylamine Bordeaux for example, in contrast to Para Red, was not satisfactorily dischargeable with hydrosulphites. The difficulties were overcome with the aid of catalysts of both inorganic and organic character. The first effective substance used for this process was iron nitrite, but this was soon replaced by a number of more efficient products, among which were several organic dyestuffs such as Induline Scarlet, Setopalin, and Patent Blue. The ideal catalyst was then discovered in anthraquinone, which today is still used in almost every case, also in discharge work with indigo and anthraquinonoid vat colors as an effective hydrogen carrier in neutral and alkaline media.

Hydrosulphites are classed as strong reducing agents; it is, however, recognized that very mild reducing agents can exert a powerful reducing action provided a suitable catalyst is employed. Lichtenstein and Jungmichl were thus able to print vat colors very successfully without the use of hydrosulphite, simply by using dextrose and potash with the sodium salt of anthraquinone beta-sulphonic acid (known as "Silver Salt") as a catalyst. By this process very good results are obtained, specially in block and screen printing where hydrosulphite preparations, which rapidly decompose, frequently gave rise to the well known undesirable irregularities in the printed portions.

R. H.

Historical Gleanings

The Development of Spanish Dress

When Spain began to exert influence on dress fashions, it was the craft of the weaver rather than that of the tailor which was decisive. For medieval fashions the manufacture of silk fabrics in Spain was of importance far beyond the boundaries of that country. It had been the privilege only of the very wealthy to buy silks woven in the East. When the Moors introduced the art of silk-weaving into Spain, the precious fabric was brought within the immediate reach of Europeans; furthermore, silk was a material eminently suited to the Gothic style of dress, which favoured flowing robes falling in voluminous folds. Statues of the Gothic period, from the 13th century onward, suggest a fashion of thin silk fabrics which revealed the lines of the figure, even when cut to hang in folds. In the so-called Romanesque epoque, which preceded the Gothic age, there was a certain rigidity about the dress of western Europe. The cause of this lay not only in the tunica-like cut of the clothes, but also in the material used, which was chiefly wool. A peculiarly Spanish style of dress did not begin to develop until about the end of the 15th century. A shirt, which Philip the Fair, a Habsburg prince and a son-in-law of Queen Isabella, brought home from Spain, caused a mild sensation. By way of collar this shirt had a species of

ruff, very small as yet, and more like a narrow border of lace.

Whereas elsewhere in Europe vast breeches, puffed out and slashed, were worn, Spanish breeches were cut short and quite plainly, being worn with long hose reaching to the thighs, and revealing the play of the muscles, and the harmonious lines of the body. Such harmony of figure being, however, allotted only to the happy few, the Spaniards made up for minor deficiencies by means of judicious padding. The long hose could not, it is true, be padded, and revealed every line of the legs. The breeches, however, gradually assumed balloon-like proportions, which made walking a stiff and stilted strut. The short doublet, too, was padded at the shoulders, chest, and even in the region of the stomach. This "Spanish stomach" is one of the curiosities of the history of dress.

During the 16th century, the high collar or ruff developed prodigiously, necessitating a change in the style of hair-dressing. Men wore their hair short, and the flowing beard dwindled to a small pointed Vandyke. The head was held stiffly erect, but this stiffness was considered expressive of dignity; laced and padded to immobility, the Spaniard felt himself to be the perfect "hidalgo".



*The daughters
of Philip II.
Portrait
by Alonso
Sanchez Coello
(1515? to
1590).
These children's
dresses show the
rigidity of
Spanish costume
to perfection.
Photo:
Hanfstängl.*

About this time the bonnet hitherto worn by men was replaced by a large felt hat, the wide brim of which lent to the wearer a bold air, which was heightened by a short wide cloak, the "Capa Castellana".

Women's dress of the period was distinguished by the crinoline, or hooped skirt. A rigid frame-work of wood and metal was padded, and covered with heavy silks and velvets. This skirt, like men's dress, was intended to add dignity and consequence to the wearer. The wider the skirt, the more tightly the bodice was laced; it was surmounted by an enormously high collar. The hair was dressed in a lofty erection held in position by a specially devised frame.

Uncomfortable and costly though this style of dress was, it achieved widespread popularity. In the 16th century Spain was the most powerful country in the world, and was predominant in matters of etiquette and dress. Charles V, German Emperor and King of Spain, preferred simple clothes, but when travelling through his vast dominions, he was always accompanied by a retinue of courtiers and merchants dressed in the height of fashion. A new whim of fashion originating in Spain was soon taken up in Austria, Flanders, and Italy. Both politically and economically Spain was very closely linked to the rest of Europe.

Philip II, son and heir of Charles V, had but little liking for the gay silks woven in his realm. Bright colours and lively patterns were not in accordance with the taste of the monarch who built himself a gloomy palace far from the turmoil of the world.

Philip preferred black clothes, so black became a colour of particular elegance (see ill. p. 717). There were also certain pale colours, known elsewhere in Europe as the "colour of the sick Spaniard" or the "colour of the dying Spaniard". In the 17th century, Spanish dress continued to enjoy wide popularity. Men and women dressed à l'Espagnol or prided themselves on "un corps bien espagnolé", a laced and padded figure. The French countess d'Aulnoy, who travelled in Spain in 1679, saw details of dress which were astonishing even to the fashionable Parisienne. She described the dress of a young Spanish gentleman as follows: ... His hair was tied with long blue ribbons. His black velvet breeches were exceedingly tight. His short doublet had very long sleeves, lined with white taffeta. In his belt hung a stiletto and a shield. In one hand he carried a long sword, in the other a cloak of black cloth... His golilla (collar) was so high that he could not turn his head. His hat was enormous, and his shoes were of thin strips of leather.

The reports of the countess d'Aulnoy on women's dress show that Spanish fashions were gradually becoming grotesque. We read of the custom of wearing, even during the hot Spanish summer, a petticoat of white lace worth several thousand crowns, and on top of that six or seven other petticoats of silk or velvet. Another peculiarity were the large spectacles (ocales) worn by young ladies of the court at Madrid. They had no defect of eyesight, nor did they usually strain their eyes with reading. The glasses were just one of several



Elizabeth of Valois, third wife of Philip II. Portrait by Alonso Sanchez Coello (1515(?)–1590). The stiff undergarment, the bodice crusted with jewels, the collar and the richly embroidered outer garment impart to the young French princess an air of Spanish grandezza. Photo: Wolftrum, Vienna.

aids to "grandezza", or dignity of appearance. The lack of sense of proportion is also shown by the enormous earrings, which hung down to the shoulders. Sometimes small bells or clocks were suspended from these earrings. The bells had the double effect of being heard as well as seen. The impossibility of making practical use of a clock or watch worn suspended from the ear seems to have escaped notice.

The Countess further tells us that Spanish women walked very clumsily, as they usually wore a species of short stilts when walking abroad. This was especially true of the upper classes. The higher the rank of a Spanish woman, the more restricted her movements. Of the Queen of Spain it was said: "The Queen has no legs", but ladies of the lesser nobility also wore very long skirts, and avoided showing even the tips of their shoes. These efforts to hide the legs point to Oriental influence, as does the confinement of the Spanish woman to the house, to this day an unwritten law in that country. Of obviously Moorish

origin is the mantilla of the Spanish women, the veil now worn only as a becoming head-dress during Easter week. A. W.

Mohammedan Dress

was very simple during the early days of Islam. The Prophet threatened those who wore silk in this world with suffering in the next. When silk finally did become popular, Mohammedans were recommended to wear the costly fabric only as a border to their robes, and not to let it be wider than the breadth of four fingers. Green was considered a lucky colour by the Mohammedans. Though black is usually avoided in the East, that is not the case with Mohammedans, as Mohammed is said to have worn a black robe on the day of the conquest of Mecca. Among the followers of the Prophet red and yellow are shunned as the colours of anger. Mohammed himself stated that Allah loves white. The first independent Mohammedan ruler in Spain, Abdurrahman, who flourished in the second half of the 8th century, wore, according to Arab historians, a white robe and turban. The turban, a typical headdress for men in the East, is said also to have been worn by women in Spain. At that time the origin of the turban was forgotten. Various theories have been put forward in explanation of the origin of this peculiar headgear. It is said to have been used like a pocket for keeping small articles in. If the two ends of the turban were unwound, the long strips of cloth could be used by riders to tie themselves to the saddle if they wanted to sleep during a long ride. The turban ends were also used for strangling enemies.

Mohammedans often hung their robes on perfumed frames. The scent was a sign of particular cleanliness. Towards the end of the long struggle between Mohammedans and Christians in Spain, the Islamic subjects of Christian princes were governed by strict laws. In 1408, John II of Castile ordered the Moors to wear yellow hoods and on their right shoulders a blue badge in the shape of a crescent. Mohammedans who disregarded this law were publicly punished with fifty strokes of the lash, and the offending garments were confiscated. This compulsory garb was intended as a safeguard against possible traitors or spies of the Moorish kingdom. A. W.

Dress Laws and Clergy in Spain

Among the many laws against luxury there were several concerning the clergy in particular. In 1267, at a time when the struggle between Christians and Moors in Spain was as yet undecided, it appeared desirable, in view of the troubled times, to impose a certain restraint on the clergy with regard to extravagance in dress. They were requested to wear "dress neither too long nor too short for decency's sake, to avoid green and red colours and sleeveless robes". Inventories which have been preserved suggest that these regulations were not invariably observed. The "Reconquista" the re-conquest of southern Spain, the victory over the Mohammedans, gave the Spanish clergy great

*The separation
of lime soaps*

is prevented
by the addition of

Ultravon W
to the wash water

power and influence. Thus it came about that a law of 1611 restricted the wearing of cloth of gold to the clergy.

A. W.

Francisco Goya

was born in 1746 in a small Aragon village not far from Saragossa. His talent for painting soon revealed itself, and he was taught by a master who had studied in Italy. Soon, however, the lively young painter appears to have come into conflict with the moral susceptibilities of his family or of the authorities in his native place, for his departure for Madrid was something in the nature of a flight. Even the Spanish capital does not appear to have given Goya sufficient opportunity for dissipating his exuberance, and he left Madrid for Rome as suddenly as he had come. It was not unusual for young Spanish artists to make such journeys with the aid of grants of money to support them. Goya provided the means to pay for his studies in a different manner. He became a bull-fighter, joining a so-called "quadrilla", a group of bold young fellows who wandered from place to place staging bull-fights. It was a lucrative occupation, but Goya, an artist with extremely sensitive nerves, was unable to stand the strain, in spite of his adventurous spirit. He arrived in Rome ill and penniless. Once there, he devoted himself entirely to his art, won prizes at an exhibition, and returned to Madrid in 1788, married to the daughter of an Italian painter, and father of a son. Then began an untroubled period of fruitful labour, which was made all the more productive by reason of the turbulent experiences which had gone before. During the years which had followed, Goya designed thirty tapestries by command of the King, which were to be made in the factory of Sta Barbara near Madrid. This work brought him approximately £ 1200. He designed other tapestries besides these, but they all remained unexecuted. When, after the dethronement of Queen Isabella II in the military rising of 1868, inventories were being drawn up of the works of art in Madrid, 43 tapestry designs were found in a cellar of the Royal palace, all the work of Goya, who had died at Bordeaux in 1828.

The Spanish character, strange, often incomprehensible, divided in itself, yet profoundly human withal, is well expressed by Goya's art and the way it was received by his countrymen. At heart Goya was always a rebel, a severe critic of society. Famous throughout the world are his graphic works, especially the series of drawings "Desastres de la Guerra" (The Disasters of War), truly apocalyptic scenes of horror. The artist who had witnessed revolution, the invasion of the French, Spain's struggle against the foreign oppressor, years of almost continuous bloodshed, could nevertheless also paint pastoral scenes with a charm as delicate as that of Watteau. He drew the young girls of southern Spain and children playing on the river-bank. As a mark of the Royal favour he was also commissioned to paint frescoes for the church of San Antonio of Florida in Madrid, and he executed portraits of three Spanish kings, Charles III, Charles IV,

and Ferdinand VII. Goya's august patrons appreciated his talents sufficiently to allow him to express his opinions somewhat violently on occasion. When English troops were sent to Spain during the Peninsular War, Goya was commissioned to execute a portrait of the English general, the great Duke of Wellington. The portrait was, however, never finished. Some casual remark of Wellington's angered the former bull-fighter to such an extent that he cast courtly manners to the winds, and brought the sitting to an untimely end by hurling a piece of plaster at the head of the Iron Duke.

A. W.

Tapestry Weaving as the Subject of a Painting by Velazquez

Diego Velazquez, the great master of Spanish painting, held a court office; he was chamberlain to Philip IV. As Palomino, one of his earliest biographers, tells us, it was parts of his duties to issue the tapestries required for decoration of the palace on ceremonial occasions. This part of his duties was doubtless of particular interest to the artist Velazquez. We possess eloquent proof that he was thoroughly conversant with tapestry-weaving, the painting in the Prado, known as "Las Hilanderas" (the Spinners), which was painted about three years before his death. It represents the sum of his experience in painting, and heralds a school which was not to become prevalent until nearly two centuries later. The earliest painting of outstanding merit representing an industrial scene, the "Spinners" are the first approach to modern realism, and the painting achieves its effect principally by means of the modern technique of light. In a word, it anticipates the principles of Impressionism.

The painting shows a workshop lit by a concealed window, and leading into a raised, light-flooded gallery, which evidently serves for exhibition purposes. In the workshop five women are engaged in the spinning of wool for tapestry-weaving, as may be inferred from the tapestry hanging in the room at the back. The principal figures are a young girl half turned away from the beholder, engaged in winding wool, and an older woman at a spinning-wheel. The fact that the spinning-wheel is shown in full movement, with the spokes painted as a whirl of light instead of singly is one of the details which mark Velazquez in this painting as a pioneer. In addition to the principal figures a girl is seen on the left, drawing back a curtain, while two other girls are working with a wool-comb, and carrying in a basket respectively. In the gallery behind, three elegantly dressed ladies—evidently belonging to the court—are seen in front of a tapestry depicting a mythological scene which has so far not been explained. The bass violin leaning against a chair suggests that the gallery is also a living-room.

Tapestry-weaving was of comparatively recent origin in Spain. It is true that during the Middle Ages, pictorial fabrics were woven at Castile, but from the 15th century on, native products had been almost completely ousted by imports from Flanders. In Salamanca only, a remnant of the industry survived.



The Spinners ("Las Hilanderas"). Painting by Diego Velázquez, Ab. 1657. Prado, Madrid. The painting probably represents a work-room in the tapestry-workshops of Santa Isabel, Madrid.

It was only at the beginning of the 17th century that the technique was reintroduced by Flemish weavers brought to Spain by the Duke of Pastrana (a small Castilian town). The products of this factory are said to have been of very high standard. In 1625 tapestry-weaving appears to have moved from Salamanca to Madrid. A certain Antonio Ceron set up a tapestry-workshop on the island of Santa Isabel with four looms and eight assistants from Salamanca, he also trained eight apprentices. In vain he sought to obtain a subsidy—at that time a Fleming named Franz Tons was already employed at Pastrana—but in view of the demand of court and aristocracy for tapestries his business probably flourished. This workshop on Santa Isabel is generally considered the scene of Velázquez' painting. It may have been suggested to him by a visit which he paid there as an adviser to some noble lady.

W. B.

Diego Rodriguez-Velazquez

was born at Sevilla in 1599. His father, Rodriguez de Silva, was a lawyer; his mother's maiden name was Velazquez, and was later assumed by the artist. At that time Sevilla was a busy, bustling city, the centre of all the trade with the Americas. Young Diego studied philosophy and languages, but, following his natural bent, he soon became a pupil of the painter Herrera. Herrera imparted to his pupils a love of all that was

Spanish; he had no use for the Italian school of painting. The future master's second teacher was Pacheco, a theorist who had great knowledge of perspective. In 1624 Velazquez was summoned to Madrid to the court of Philip IV, a mediocre ruler and a bad painter with unbounded love of the art. To have assisted Velazquez is one of Philip's greatest services to posterity. He granted him a pension of 28 ducats monthly, paid him a fee for every painting, procured free hospital treatment for him in case of illness, and followed the artist's progress with unflagging interest and never-failing enthusiasm. The King was a daily visitor to Velazquez' studio and a willing model: Velazquez painted no fewer than forty portraits of Philip IV. His principal aim was the faithful reproduction of Nature; his own observations were more precious to him than the teachings of the masters. It was to the friendship of his Royal colleague and patron that Velazquez owed his acquaintance with the great Dutch painter Rubens, who came to Spain on a diplomatic mission in 1628. At a later date Velazquez went to Italy to purchase paintings and sculpture for Philip IV. His purchases appear to have pleased the king, who decided, as a mark of particular favour, to ennoble his friend. Great as was the power of the King of Spain, the elevation to the ranks of the nobility was subject to conditions before which even the Royal will had to bow. Velazquez had to prove that his blood was "pure", "un-



Philip IV of Spain (1621-1665). Portrait by Velázquez (1599-1660). The richly figured silk suit is partly embroidered. National Gallery, London.

tainted" by Jewish or Islamic connections, and that he was not engaged in any commercial enterprise. It was finally decided that he was worthy of being numbered among the nobility, as he did not sell his pictures, but was merely the King's painter. Velázquez' new position offered him a certain protection against the encroachments of the Inquisition. It is doubtful whether his superb "Venus and Cupid" would ever have been painted, had his rank not in a measure precluded criticism. Velázquez' portraits are esteemed particularly because of their faithful and conscientious regard for detail. For the study of the dress of his time such portraits are of inestimable value. In them the

silk-weaving and embroidery of the 17th century live on. No painter can be compared with Velázquez in endowing his exalted sitters with the "grandezza" so eloquently expressed in their bearing and dress. A. W.

Merino Sheep

have played an important part in the centuries-old history of sheep-breeding in Spain. Opinions on the origin of this breed of sheep are divided; some authorities assume that they were introduced into Spain from England; others give North Africa as their place of origin. However that may be, they found favourable conditions in the Spanish uplands, and developed characteristics differing considerably from those of other European breeds of sheep. Large herds, varying from 10,000-40,000 head, were in charge of a "Mayoral" who had about fifty assistants, divided into four groups with wages according to their work and responsibility. The Merino sheep were usually kept indoors during the winter, and were not put out to graze until the end of April. There was, however, a certain variety known as "Troshumantes". These remained in the open all the year round, and as a result developed a particularly good quality of wool. The cañades, the paths taken by these sheep, were carefully regulated.

A special court in Madrid called the "mesta", watched over the traditional privileges of the Merino sheep breeders and the preservation of the cañades. The patron of Merino sheep-breeding was the King himself. W. N.

Spanish Coinage

developed, unlike that of France, Italy, or Germany, directly from the Roman monetary system, without the necessity for a reform such as that carried out by Charlemagne. The Spanish standard coin, the sueldo, was the immediate descendant of the Roman aureus. The gold sueldo contained one sixth of an ounce of fine gold, the silver sueldo one eighth of an ounce. At a later period the name sueldo was replaced by maravedi, an Arabic word meaning constant. The maravedi was, however, very far from living up to its name; on the contrary, it was subject to the most extraordinary fluctuations. It originally contained 56 grammes of gold, but in the 13th century the quantity was reduced to 10 grammes. In time the word maravedi came to mean simply a coin, even a copper coin. Expressed in terms of fine silver the maravedi was worth:

in 1312 =	5.85	grammes
„ 1368 =	16.79	„
„ 1390 =	6.71	„
„ 1454 =	1.49	„
„ 1808 =	0.6	„

At the time of Queen Isabella one silver real was worth 30 maravedi. A. W.

Cibacete Colors

*produce dyeings fast to
light on bright or delustered
acetate rayon*

Cibacete Colors

*reserve cotton and viscose
rayon*

Cibacete Colors

*are readily dispersed and
level well*



*Ten Cibacete Colors
that discharge to a clear white*

Gibacete Yellow GGR

Gibacete Red GGR, GR and B

Gibacete Orange 2R and 4R

Gibacete Discharge Violet 5R

Gibacete Scarlet G and BR

Gibacete Discharge Blue 3G