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Edited by Rosella GRAZIAPLENA with the assistance of Mark LIVESEY.

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José Carlos BALMACEDA

## Genoa's contribution to the development of the Spanish paper manufacture

### *Summary*

The Genoese paper was a support of the utmost importance from the 16th century in the occidental culture, creating from the discovery of America, an increasingly dependence of this product among the manufacturers-merchants and the Spanish Crown that would go on for almost three centuries. This lack favoured the installation of many Genoese paper masters; mainly from Voltri, in different areas of the Spanish Peninsula.

In the actual investigation we pretend to establish, through its location, the different types of paper that were manufactured, watermarks that were used and served later as a model to local manufacturers, the labour conditions, its familiar composition, and above all to evaluate how the technical knowledge contributed to the existing but poor Spanish paper industry, influenced its rebirth and the creation of this activity in areas where it was non-existent.

### *Introduction*

We have focused the investigation we began in 1999 in four wide issues that might, according to the development of our work, provide a wider and impartial point of view about the reasons that caused the situation of dependence and that allowed a Genoese monopoly of the paper trade throughout the wide Spanish geography with its negative consequences for the development of the Spanish paper industry.

From the 15<sup>TH</sup> century, paper made abroad, first French, and then Italian, mainly paper manufactured and commercialised by Genoese traders, began to be essential. This dependence would worsen when the printing press was invented and America was

discovered meaning that, the need of this support to administrate the colonies grew. In fact, large quantities were required from the 1636 when the use of sealed paper for all the administrative documents in the vast territories of the Spanish crown was introduced.

Quite some time before, the Genoese trading community had settled in the important cities of the Islamic Spain and above all in those which, of course, permitted a better distribution of the products to the interior of the Peninsula, those being Seville, Cadiz, Malaga, Valencia, Barcelona and the North Atlantic area where we find the richest registers of their commercial activity and particularly the sale of paper. Their settling, always linked to the economical subsidy of the Spanish kings was favoured with privileges, franchises, settlements, huge incomes and enough power to influence not only the Spanish court, but also the government of Liguria.

The need for and the desire to bring Italian masters, above all to convey their knowledge, the study of the most recurrent watermarks, and how they finally influenced the Spanish manufacture, are some of the questions that we pose in our work.

### *Import of Italian paper*

First we confront the identification of the import of the Genoese paper as a starting point in order to separate the origin of other Italian areas and to evaluate its importance in connection with the production of the Spanish mills that was destined to domestic consumption, above all in printing.

Spanish Islamic paper had a fundamental place in the manufacture of paper in Europe because its production is documented in time before 1200, and therefore in other European countries. We show how long that hegemony lasted, and whether its quality was the reason why its decline occurred in the presence of Italian paper which surpassed it from the outset, owing to technical contributions and the improvement of its production, since two centuries later Spain became a receiver, through the ports of Majorca, Barcelona, Valencia, Granada, among others, of Italian paper sent to traders from Ancona settled in these cities and generally transported by Genoese merchants.<sup>1</sup>

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<sup>1</sup> S. M. Sunino, N. Sassori, *Genoa e Spagna nel XV secolo* "El Rictus Catalanorum" (1421-53-54), Genoa, 1970. G. Aivaldi, *Genoa e Spagna nel secolo XV: "Liber damnificatorum in regno Granate 1452"*, Genoa, 1966. E. Ashtor, *Le commercio Anconetano con el mediterraneo occidentale nel basso medioevo*, Ancona, 1982.

These merchants would be the ones who, from the 17<sup>th</sup> century, would become the absolute owners of this trade and especially on behalf of the Spanish crown. This dependence would last and until the end of the 18<sup>th</sup> century and, notwithstanding the decline which, according Calegari,<sup>2</sup> it would also undergo, we will continue to find a high percentage of Italian and Genoese paper in America in the already independent American colonies during the middle of the 19<sup>th</sup> century.

The study of the reasons for this chronic lack was very illuminating, of the need of foreign paper for the Spanish printing, specially for the publishing of bulls of the Saint Crusade during the 17<sup>th</sup> and 18<sup>th</sup> centuries, made worse by the first introduction of sealed paper.

The production of the Spanish paper mills existing in this period tells us that not only low production at best would not have met the minimum need, but also that the limited quality of the paper, as Gayoso Carreira and Oriol Valls have already said, reasons that made the interested parties (printers, manufacturers and the people responsible for the Saint Crusade), claim an improvement of the said factories and the establishment of others.

The king was also requested to permit the entrance of Genoese masters with two very clear objectives in mind: to improve the quality of the papermaking, and for them to teach their methods to the local masters. The existing industry was unable to produce a quality paper owing to the lack of real specialists. Notwithstanding this, it has been insisted that the main reason was the lack of raw materials, meaning to say the quality cloths that the Genoese enjoyed the privileges to buy and remove.

This topic, I believe, required some deep reflection, because it is true that all raw material are the essential basis of a product, but if there is a lack of technical information, knowledge and the appropriate personnel, there will always be a dependence of someone who possesses them, which was the case with Genoese manufacture. This not only kept its dominance for these reasons, but also pressed the Spanish crown to monopolise in exchange for huge sums of money that bankers and traders lent, many of them related to the manufacture of paper, the financing of armies and the expenses of the king and the civil service.

### *The immigration of Genoese specialised labour*

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2 M. Calegari, *La manifattura genovese della carta* (16<sup>th</sup> -17<sup>th</sup> centuries), EGIG. Genoa, 1985.

In the 15<sup>th</sup> century the establishment of a Genoese paper manufacturer in Valencia is recorded (in 1470) and was followed by many others in different places in Catalonia (1477), Castile (1515) and the rest of Spain. This immigration would not cease until the end of the 18<sup>th</sup> century (Table 1).

This emigration of paper manufacturers at the beginning of 1500 began to worry the Genoese authorities, leading them to punish the emigration of these expert artisans. One of the worries of the Genoese State (which resulted in many bans in this particular this century) was not only the emigration of the paper masters, but also that of mill carpenters (*maestro d'ascia*), experts in the construction of the machines and tools necessary for production,<sup>3</sup> reasons that back up our hypothesis that ignorance of manufacturing methods was one of the main reasons for the bad quality of the Spanish paper of that time and therefore, of its poor level of development.

TABLE 1  
*Genoese paper manufactures in Spain (15<sup>th</sup> – 18<sup>th</sup> Centuries)*

<i>Year*</i>	<i>Place/ Town</i>	<i>Paper manufacturer</i>	<i>Origin</i>
1470	<i>Valencia</i>	<i>Agostino di Giovanni**</i>	<i>Génova</i>
1477	<i>Cataluña</i>	<i>Tomás y Francesco Guerço</i>	<i>Génova</i>
1515	<i>Segovia</i>	<i>Juan Thomas Favario</i>	<i>Milán?</i>
1675	<i>Segovia</i>	<i>Giambattista Fabbrega</i>	<i>Voltri</i>
1683	<i>Segovia</i>	<i>Manuelo y Niceto Rovereto</i>	<i>Voltri</i>
1613	<i>Cuenca</i>	<i>Juan de Otonel</i>	<i>Voltri</i>
1690	<i>Alicante</i>	<i>Giacomo Pellerano</i>	<i>Voltri</i>
1710	<i>Galicia</i>	<i>Bartolomeo Piombino y Giuseppe Gambino</i>	<i>Génova</i>
1714	<i>Ávila</i>	<i>s/especificar</i>	<i>Génova</i>
1730	<i>Granada</i>	<i>Gian Giacomo Bonicelli</i>	<i>Voltri</i>
1774	<i>Ávila</i>	<i>Félix Solesio</i>	<i>Finale</i>
1787	<i>Málaga</i>	<i>Félix Solesio</i>	<i>Finale</i>
1792	<i>Madrid</i>	<i>Féliz Solesio</i>	<i>Finale</i>
1780	<i>Valencia</i>	<i>Francisco Barbarrosa</i>	<i>Voltri</i>
1808	<i>Cuenca</i>	<i>Benito Barbarrosa</i>	<i>Voltri</i>
1801	<i>Málaga</i>	<i>Domenico, Francisco y José Guighiotto</i>	<i>Génova</i>

\* We marked the ancient register in each city of each maker.

\*\* Called Agustín Marquesano.

Genoa, relates Calegari, tried to maintain the patrimony in order to keep the program productive<sup>4</sup> that began to render high yields. The export of export of knowledge about manufacturing to their main purchaser would be disastrous. The Genoese authorities continued

3 M. Calegari, *op. cit.*

4 M. Calegari, *op. cit.*

stating this later on when a group of Genoese traders-manufacturers tried to halt the paper trade to the Indies.

In order to establish a mill in a new region, competent masters were imported, which what the Europeans had done from the 13<sup>th</sup> century. The Arabs, for their part, had received knowledge about paper-making from the Chinese masters. It is known that the paper artisan practised his art as he had learned it from his master as a special skill subject to rules regarded as sacred by tradition and that could not be explained or investigated.

Prior to the 18<sup>th</sup> century, knowledge was transmitted exclusively from the paper master to the apprentice as always been done. Thanks to the printing press - it would be a mistake not to take it into consideration- technicians and artisans could be taught to read and write. The use of specialised books and this market expanded considerably during this century,<sup>5</sup> containing information that favoured the teaching of paper manufacture techniques. In Spain, as a part of the erudite project to stimulate the manufacture, a version of Lalande was translated and published in Madrid in 1778, although Pedro Araus, also in Madrid, had already published his *Modo de hacer el papel* (A way to make paper)<sup>6</sup> in 1767.

The Crown showed its appreciation for the emigration of expert labour from Voltri, with master receiving franchises and thanks, or the owners of the mills were favoured where these came to work. Owing to these paper manufacturers a certain recovery of the paper production was produced in Catalonia, Levante, Malaga and other areas of Spain during the periods in which they worked, because they generally didn't stay long time.

#### *Genoese watermarks: a characteristic of the Hispano-American documentation*

Written and printed documentation in Spain and Hispano-America gives us, besides a unequivocal information about the origin

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5 Encyclopaedias in which technique and economics had a central place appeared; the first one was published in London, in 1728, by Ephraim Chambers; the most important one was edited in Paris between 1751 and 1780 by Denis Diderot and Jean le Rond d'Alembert, and the broadest one, the economic-technological Encyclopaedia, began in Berlin in 1773 by Johann Georg Krünitz which was composed of 242 volumes in 1858.

6 Economic weekly magazine *Semanario Económico* in numbers of october 29<sup>th</sup>, november 5<sup>th</sup> and 12<sup>th</sup>, 1767.

of the document, a support marked with watermarks of Italian and French origin, with a high percentage of the watermarks of *the three circles* (Figure 1), to which I referred in the work presented at the 3<sup>rd</sup> National Congress of paper history in Spain,<sup>7</sup> together with the *Genoa* coat of arms (Figure 2), and the *picador* or mounted bullfighter (Figure 3), that are the ones that mainly concerns ourselves with in this study.

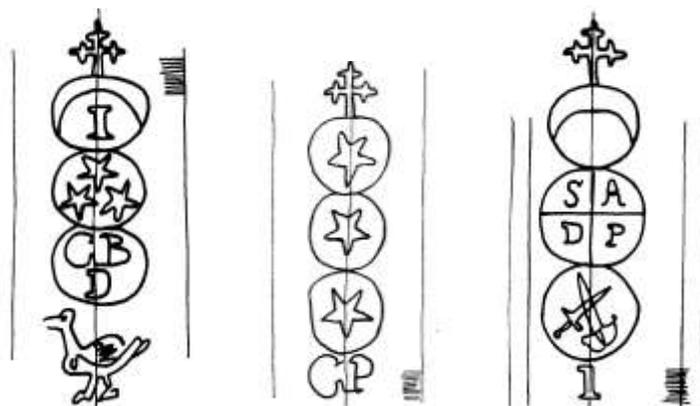


Fig. 1 Watermarks the three circles

Evaluating a partial result, because it is impossible, at least at present, to work from a complete register, this was the most frequently used paper from the 16<sup>th</sup> to 18<sup>th</sup> centuries, being the first and most abundant in symbols, initials and variants which the Genoa coat follows and mainly repeats the signs of the first and finally, the last of a later appearance and therefore, the one that didn't stay so long, but of a very important folk representation as bullfighting is and that the reason for using this image raises other questions. One of the surprising results has been the comparative study of the location of the shadow marks produced by the ribs under the chain lines, which show us another important way of identifying the support of Genoa, Catalonia, Valencia and the imitated ones in south of France.

Let's not forget that these watermarks were, at the same time, used by Spanish and French manufacturers with the intention of assuring the quality of their product was as good as the original, thereby allowing them to enter the Hispano-American trade circuit.

<sup>7</sup> J. C. Balmaceda, *Las filigranas de los primeros impresos de Buenos Aires*, Yearbook of Paper History, IPH 12, Porto (Portugal), 1998. p. 220-255.

*La filigrana de los tres círculos en la documentación malagueña del XVIII*. Actas del III Congreso de la AHHP (Asociación hispana de historiadores de papel), Banyeres de Mariola, (Spain), 1999, p. 273-294.

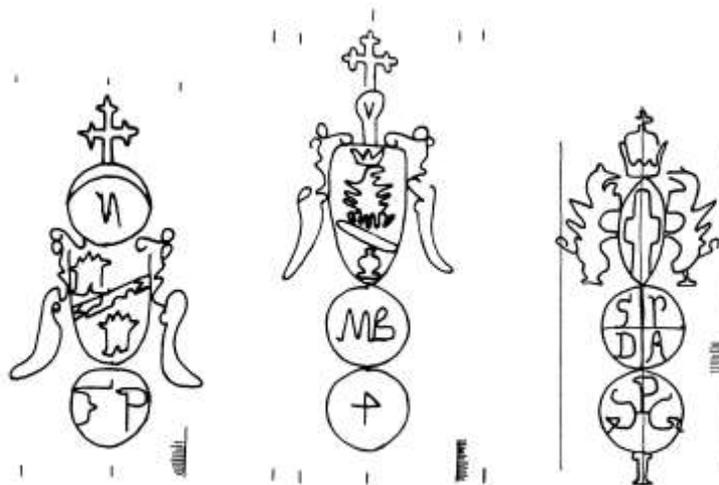


Fig. 2 Watermarks Genoa's coat of arms.

### *Genoese technical contributions to Spanish paper manufacture*

If Genoese paper, which according to a lot of consulted documentation, was with no doubt the archetype of high quality paper and was the example and model to follow of how Spanish paper of the 17<sup>th</sup> and 18<sup>th</sup> centuries should improve in order to imitate its well-known quality mainly for its whiteness, smoothness and its printing properties, that answered, no doubt to the effectiveness of its methods, that is, selection of the raw material, crushing and refining of the paste, moulds, glue or, as it was remarked in Valencia in the middle of the 18<sup>th</sup> century, its storage before sale.

The contribution transmitted on working methods, and the ones applied to the building for the to the distribution of the machinery in different rooms of the mill and therefore, the organisation of tasks from the arrival of rags at the mill, to the delivery of the ream or bale to the trade, we believe that this was an important contribution, and perhaps the biggest one, to a co-ordinated sequence of tasks and exploitation of production times.

From the beginning of the 17<sup>th</sup> century, the Genoese constructed new buildings (*Edificium apapiri*) for production which were no doubt made to the *voltrese way*, so the Otonel family in Cuenca, the Gambino in Galicia, Boticelli in Granada and Solesio in Arroyo de la Miel (Málaga), among others, back up this hypothesis.

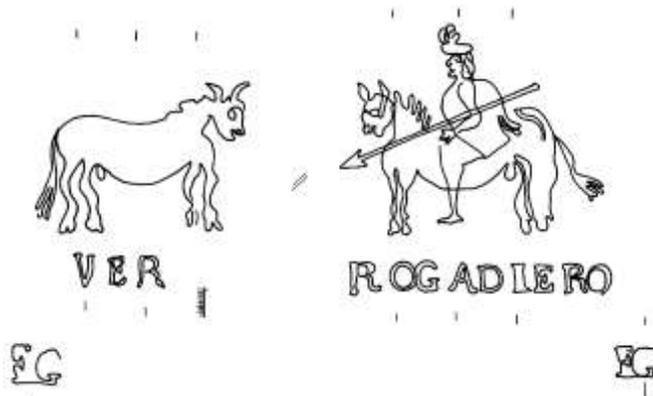


Fig.3 Watermarks the picador or mounted bullfighter

These are only some of the questions that in a very synthetic way we expose in this meeting owing to limited time and the wide nature of the topic.