

**Proposal for the creation of a Protocol for the  
study of paper and its application in the  
investigation of the history of paper**

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## **Proposal for the creation of a Protocol for the study of paper and its application in the investigation of the history of paper**

In this presentation I want to express two ideas that I consider fundamental in the study of paper

1. The necessity to create a basic protocol concerning the characteristics of paper and watermarks, with the consensus of the international community of historians of paper
2. The use in this protocol of some items that help us to draw conclusions on the diverse topics that articulate the history of paper

### **Background**

I have worked with Ana M<sup>a</sup> Herrero, archivist of the City council of Oviedo, Asturias, Spain, for 15 years in the creation of a protocol. Initially we used the protocol created by IPH in 1992.

We applied it to the paper used in Asturias previous to the XVI century. We presented the results at the National Congress of Historians of paper, Cuenca 1996, and at the International of IPH, Oporto 1998.

The large number of items in this protocol -82- discouraged our colleagues from using it.

Later on we created a simpler protocol.

We presented it at the National Congress of Historians of paper, Sarrià de Ter 2003.

At the moment it is part of the proposal for the creation of a corpus of Spanish Watermarks that Carmen Hidalgo directs; this project was presented at the National Congress, Paular 2007.

The application of this protocol to a period of a documental fund has allowed us to reach very valuable conclusions regarding the history of paper

### **METHODOLOGY**

- 1 - Protocol: Description of each type of paper
- 2 - System of watermark reproduction
- 3 - Diagrams illustrating the characteristics of paper
- 4 - Conclusions of the study
  - Dimensions of the sheet
  - Characteristics of the form: number of chainlines, support chainline, distribution of the laid lines and chainlines
  - Statistics of papers with watermarks
  - Watermark types: simple / double
  - Papermills and papermakers
  - Search for a "standard" paper format
  - Origin of paper: Spanish / not Spanish
  - Watermark: classification according to the elements that it represents

## DATA TO BE REGISTERED

### 1.- WATERMARK DATA

1.1. Watermark Number

1.2. Description

1.3. Dimensions (height / width) and distances from the watermark to the top and the bottom of the sheet

1.4. Paper with wires: distance in mm. between the watermark and the nearest chainline on the left and on the right, and number of chainlines on the sheet

Continuous paper: distances to the left and right borders

### 2.- THE SHEET AND THE FORM:

2.1. Location of the watermark on the document

2.2. State of the sheet

2.3. Paper with wires: support chainlines and chainline carrier

2.4. Paper type: with wire, vellum or continuous

2.5. Paper with wire: total number of chainlines on the sheet and number of laid lines for each 20 mm

2.6. Dimensions of the sheet

### 3.- DOCUMENTAL DATA

3.1. Dates of the document and place of production

3.2. If it is sealed paper

3.3. Institution in which it is kept

3.4. Signature

3.5. Title. If it is a printed work, name of the author, printer, engraver, etc.

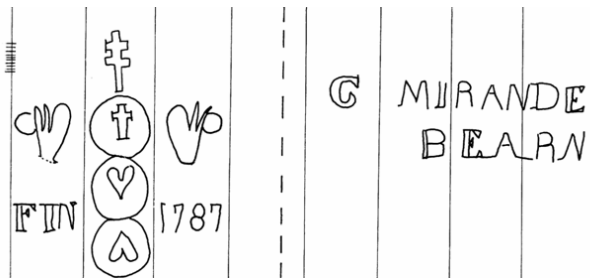
### 4.- OTHER DOCUMENTS WITH THE SAME OR SIMILAR WATERMARK

### 5.- NAMES OF THE PAPERMAKER AND THE PAPERMILL AND THEIR LOCALIZATION

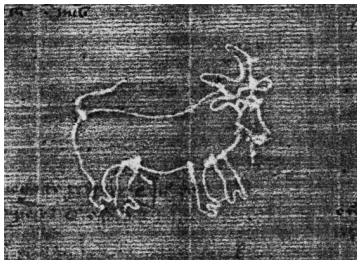
### 6. - BIBLIOGRAPHICAL SOURCES

## METHODS OF REPRODUCTION

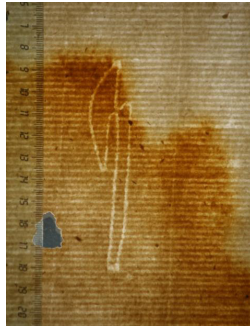
### 7.1. REPRODUCTION BY TRACING



## 7.2. PHOTOGRAPHS: TRANSPARENCY, DIGITAL AND CONTACT



TRANSPARENCY



DIGITAL



CONTACT

## 7.3. REPRODUCTION BY RUBBING



## 7.4. SCAN

### 7.5. RADIOGRAPHIC METHODS :

- BETA RADIOGRAPHY
- ELECTRON RADIOGRAPHY
- SOFT X-RAY RADIOGRAPHY

## EXAMPLES OF APPLICATION

I will begin by talking about our experience with the section of the Minute Books of the City Council of Oviedo that cover the period from 1498 to 1862

The selected examples are the Minute books covering the years 1789 to 1830

I will present you two technical files and the results after the application of the obtained data

### SNAKE

#### 1.- Watermark R-1.407.

Description: Snake crowned *tortillante*, with open mouth, extended tongue and the body divided into strips.

Characteristics: Height: 64 mm. Width: 20 mm.

Distance to the bottom of the sheet: 119 mm; to the top: 124 mm.

Distance to the left chainline: 5 mm; to the right: 5 mm.

Nº of chainlines to the left of the watermark: 4.

2.- Pages: 5v - 4r.

Cut borders.

Support Chainlines

Nº of chainlines: 16.

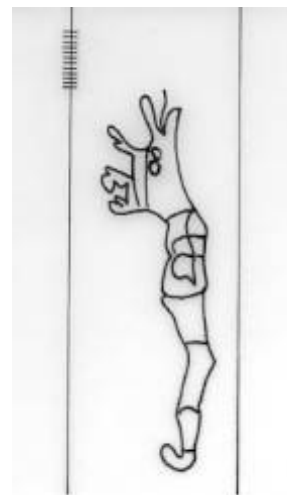
Nº of laid lines in 20 mm: 20.

Dimensions: 307 x 432 mm.

3 - Documental data: 1550, Sahagún. AMO. Donaciones, Confirmaciones y Privilegios C-18-12, ff. 4-5.

4 - Other documents in which we find this watermark:

- year 1512-1518, Valladolid. Bofarull (1959) fil. 579. Convergent Watermark.
- year 1548, Lugo. Basanta (1996) fil. 91. Apparent Watermark.
- year 1550, Valladolid. Briquet (1923) fil. 13.766. Apparent Watermark.
- year 1550, Oviedo. AMO. C-18-12, ff. 3-6. Identical Watermark.
- year 1550, Santiago. Basanta (1996) fil. 306. Apparent Watermark.
- year 1553, Santiago. Basanta (1996) fil. 243. Convergent Watermark.
- year 1548, s.l. Basanta (1996) fil. 672. Convergent Watermark.
- year 1553, Valladolid. Bofarull (1959) fil. 585. Apparent Watermark.
- year 1566, Malines, Belgium. Briquet (1923) fil. 13.799. Watermark convergent.



6 – Bibliographical References:

BASANTA (1996) Tº I: pp. 169, 198, 280, 312, 433 and 439, fil. 243, 306 and 91. Tº II: pp. 424 and 453, fil. 672.

BOFARULL (1959) p. 31, fil. 579 and 585.

BRIQUET (1923) pp. 676-683, fil. 13.762, 13.766-13.767, 13.770 and 13.799.

7.- Reproduction Watermark: by tracing

## **OLIVA**

1.- Watermark R-1.071.

Description: F de OLIVA under a cannon with ammunition.

Characteristics: Height: 56 mm. Width: 79 mm

Distance to the bottom of the sheet: 122 mm; to the top: 119mm.

Distance to the left border: 154 mm; to the right: 64

2.- Pages: 666r. 667v.

Cut borders.

Paper vellum.

Dimensions: 297 x 410 mm.

3.- Documental data: 1825, Oviedo. AMO. Reales Órdenes E-5, p. 666-667.

4.- Other documents in which we find this Watermark:

- year 1825, Oviedo. E-5 ff. 620-621

- year 1825, Oviedo. E-5 ff. 686-687

5.- Data of the papermaker:

Josep and Manuel Oliva. Town: Rojals, Tarragona.

6.- Bibliographical References :

DÍAZ-MIRANDA and HERRERO (2001) pp. 249-250 and fil. 18c.

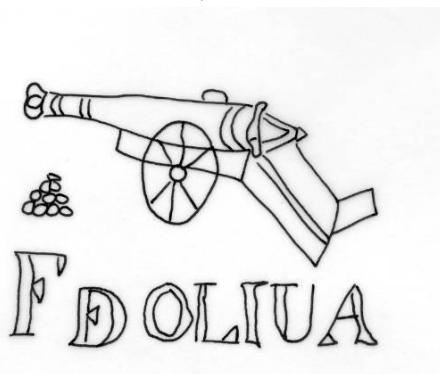
GAYOSO (1994) T. I P. 176.

HIDALGO (1986) p. 745.

MADURELL (1972) pp. 56, 265-278 and 725.

VALLS (1970), pp. 242 and 295

7.- Reproduction Watermark: by tracing



**Table with of the characteristics paper**

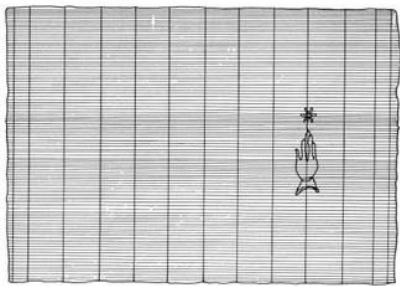
**Tabla con las características de los papeles**

Nº	Nº R	Papelero	Alt. Filig.	Anch Filig.	D. Alt hoja	D. Baj hoja	D C I	D C D	C. Izqda	Folios	Bor sin cortar	C P	Dist. C	C Ap	Nº C	P	Dimensio- nes	Dimensi- originaria	Año	Se- llo	L.
1	1.395	Abad, Ant <sup>a</sup>	94	87	104	115	3	5	3	95v-96r	1,2,3	3	24	D	18	19	313 x 433	<b>313 x 443</b>	1810	Si	Ac
2	1.394	Abad, Lorez.	86	22	101	115	1	1	12	7v	1,2,3	-	24-25	2	18	18	302 x 432	<b>302 x 438</b>	1811	Si	Ac
3	1.356	Abad, Mar <sup>a</sup>	23	84	150	136	9	3	4	7r		3	22-25	1z	9	20	309 x 218	-	1815	No	Ac
4	1.396	Abad, Pase.	90	117	97	126	3	4	11	134r-137v	1,2,3	4	23-26	2	19	18	313 x 432	<b>313 x 438</b>	1814	Si	Ac
5	1.342	Abad, Tadeo	78	102	96	139	1	15	11	138r-137v	1,2,3,4	4	23-24	2	19	21	313 x 436	<b>313 x 436</b>	1813	Si	Ac
6	1.373	AFP	102	44	104	102	22	0,1	2	4v-11r	1,2,3,4	2	22-23	2	19	29	308 x 430	<b>308 x 430</b>	1828	Si	Ac
7	1.326	Albors	112	70	92	110	0,1	3	3	16v-15r	1	3	24-25	2	19	20	310-314 x 430	316 x 442	1811	Si	Ac
8	1.364	Aloi, Felix	65	85	120	127	13	19	12	42v-43r	1,3,4	4	22-24	2	19	23	312 x 430	<b>312 x 436</b>	1819	Si	Ac
9	1.356	Aionso	55	55	116	114	11	6	3	122r		2	24-25		9	21	285 x 210	-	1812	Si	Ac
10	1.348	Antiga, Pere	87	99	98	105	10	6	12	141r-140v		4	23-24	2	19	19	290 x 420	295 x 440	1812	Si	Ac
11	1.352	Barana	11	43	169	132	1	5	4	14v-15r	1,2,4	1	22-25	2	19	19	312 x 430	316 x <b>430</b>	1813	Si	Ac
12	1.393	Barceló	86	105	126	103	0	14	3	155v-154r	1,2,3,4	5	24-25	2	19	18	315 x 436	<b>315 x 436</b>	1810	Si	Ac
13	1.363	Has	16	76	143	153	1	16	4	21v-22r	1,3,4	3	23-24	2	19	22	312 x 430	<b>312 x 436</b>	1819	Si	Ac
14	1.367	Boleda	56	43	114	143	14	13	13	Gg- G.v	1,2,3,4	2	23-24		19	20	313 x 430	<b>313 x 430</b>	1823	No	Ac
15	1.050	Boronat	102	108	101	105	4	8	12	478v-483r	2,4	4	24-25		19	25	310 x 444	314 x <b>444</b>	1821	Si	Ac
16	1.365	Boronat, Romualdo	38	107	133	134	8	14	3	75v-76r		4	25-26	2	19	25	305 x 420	309 x 440	1821	No	Ac
17	1.344	Bosque	12	34	152	151	5	8	4	227v- 228r	2,4	1	23-24		19	20	315 x 430	319 x <b>430</b>	1813	Si	Ac
18	1.368	Carol	12	37	147	150	16	15,5	4	37r-38v		2	22-24	2	19	25	309 x 420	313 x 432	1824	Si	Ac
19	1.331	Casaban	9	[56]	150	150	[13,5]	12,5	4	16v	[fragmento]	[2]	24-25	D	9	21	309 x 215	-	1812	No	Ac
20	1.349	Casa	8	43	168	137	2	3	4	210v-209r	2,4	1	23-26		19	20	313 x 428	317 x <b>428</b>	1813	Si	Ac
21	1.241	Coca	50	106	132	125	53	al borde derecho		Guarda	1,2,3,4			D			307 x 420	<b>307 x 420</b>	1847	No	Ac

## CHARACTERISTICS OF THE SEALED PAPER

1. Dimensions of the sheet: between 306 and 318 mm high and 430-448 mm wide.
2. All the papers had watermarks, from the year 1789 to 1811 only 15% had double watermarks which were placed on the right of the sheet; while in papers from the year 1812 to 1830 48% had double watermarks, the majority of them placed on the left
3. The form used to produce these papers had 18-22 laid lines for each 20 mm and 19 chainlines each 22-25 mm.
4. Many papers have the two support chainlines, a large number only one and the rest none

### “Standard” format for the sealed paper



height 306-318 mm ( 91 %)  
width 430-440 mm ( 86%)  
laid lines 19-22 per 20 mm (84%)  
chainlines 19, spaced at distances of 22-25 mm (88%)  
Paper years 1789-1811: simple (85%) and double Watermark (15 %)  
Paper years 1812-1830: simple (52%) and double (48%) Watermark

## CHARACTERISTICS OF UNSEALED PAPER

### Spanish origin:

- height 300-316 mm (80%)
- width 420-440 mm (91%)
- 18-22 laid lines in 20 mm
- Simple Watermark in 91% of papers from the years 1789 to 1811 and in 71% from the years 1812 to 1830

### French origin:

- Similar dimensions
- distances between chainlines: 26-28 mm.
- 17-18 chainlines
- Double Watermarks



## **ORIGIN: Sealed paper**

➤ **1789 to 1808:** Catalanian paper (only one paper from Zaragoza in 1797, and from Alicante in 1804, 1805 and 1808).

➤ **1800 to 1808:**

96,7% is paper from the three Catalanian regions:

45% from Barcelona, especially from the area of Anoia

33% from Tarragona, from the area of Riba and Alcover.

22% from Gerona, all of them from Sant Joan les Fonts.

3,3%, the rest from Alcoy and Concentaina

➤ **1809:** paper from Zaragoza and from Guadalajara

➤ **1810:**

68,4% from Alicante, most of it from Alcoy

31,6% is Catalanian (1/3 from Tarragona, Riba and Alcover, 1/3 from Gerona and the other 1/3 from Capellades)

➤ **1812:** Alcoy, Catalonia and Valladolid

➤ **1813:** Alcoy, Valencia and Catalonia

➤ **1814:** Alcoy, Tibi, Castellón de la Plana, Barcelona and Soria

➤ **1816:** Alcoy and Barcelona

➤ **1811:** papermills from Alcoy

➤ **1817-1819:** Catalonia

➤ **1830:** Catalonia and Teruel

## **ORIGIN: Unsealed paper**

➤ The national demand for unsealed paper was met by national and imported paper.

➤ For unsealed paper:

▪ 82,5% was from Spanish papermills

▪ 13% was from French papermakers and 4,5% from Italian ones in the years 1789-1811

▪ 17,5% was French in the years 1812-1830

▪

## **CONCLUSIONS**

- ✓ In the Minute Books of the City Council of Oviedo we see that until the year 1744 the paper that was used was, for the most part, Genoese.
- ✓ A situation that the crown tried to change by motivating and protecting the Spanish papermills.
- ✓ From the year 1744, until the Napoleonic invasion, Catalanian papermakers formed societies with the aim of obtaining contracts for the provision of paper to the Public Treasury. With the Napoleonic invasion the Catalanian papermills were closed down and the papermakers from other places, particularly Alcoy, took charge of the supply of paper to the Royal Seal.



- ✓ With the stabilization of the political situation in Spain after the Napoleonic invasion, the papermakers from Alcoy became the main competitors of the Catalonians in the supply of official paper.
- ✓ From 1817 onwards the Catalonian papermakers were able to virtually regain the monopoly in the provision of paper to the Royal Treasury.
- ✓ The presence during this period of paper from other Spanish regions, apart from Catalonia and Levante, was not relevant and was discontinuous.

## **PAPERMILLS**

The papermaker is the actual owner of the papermill

Association of diverse papermakers or merchants:

- to exploit the papermill itself
- for the combined sale of paper to big institutions such as the Royal Treasury
- to export it to America
- to defend other interests

Conversion of flourmills to papermills or the use of the same mill for both types of production

The formation of big dynasties was very frequent : Costa, Romani, Boronat, Guarro, Pastrana, Elías

## **GRAPHIC ELEMENTS REPRESENTED ON WATERMARKS**

Watermarks composed of a shield, scroll or circle with the last name or initials of the paper inside

Watermarks with just the letters of the papermaker

Watermarks with the name of the town or region.

Religious watermarks: attributes of the passion, cross, chalice, church, rosary

Watermarks with a tower

Watermarks with a bell.

Watermarks with parts of the human body: heart, hand.

Watermarks consisting of an animal and the name of the papermaker: mermaid, wolf, dove

Watermarks with a sun and the last name of the papermaker

Watermarks with a crescent and the initials of the papermaker

Watermarks with a caravel and the last name of the papermaker

Watermarks with a bullfighter on horseback.

Watermarks with a broken vase and the name of the papermaker

Watermarks consisting of a vegetable motif: pomegranate, cypress

Watermarks consisting of diverse objects: anchors, scales, crowns, keys

Watermarks with elements alluding to the last name of the papermaker: rosemary, vine

Watermark formed by three circles.