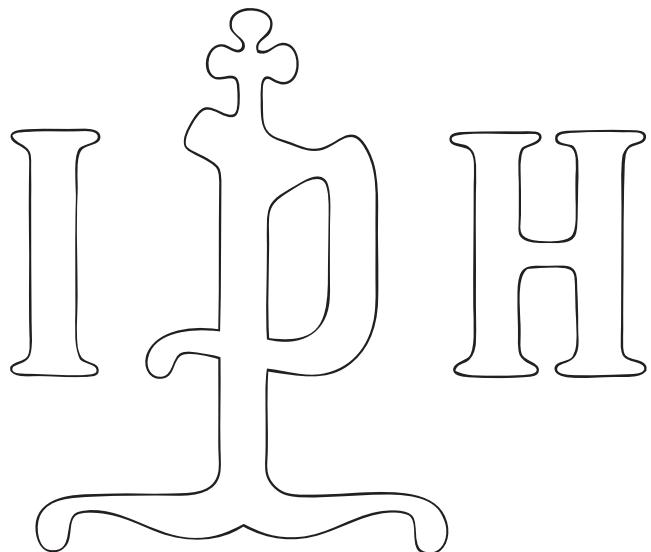


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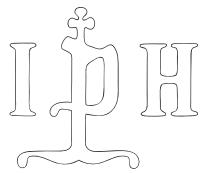
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Deadline for contributions each year 1. April and 1. September

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Dear members of IPH

After the IPH Congress 2012 in the Upper Rhine Region much activity in writing, collecting, editing and layout of the final manuscripts has taken place. Thanks to mutual and fruitful cooperation between the authors and the congress programme committee we are now ready for the printing process, and you can look forward to receive the 2012 IPH Congress Book, volume 19 before the end of the year.

Hopefully the book can be of inspiration to send proposals for new papers to the 32. IPH Congress next year in Italy. Please note the Call for papers from the Fabriano congress organization in this autumn issue of the IPH periodical and on our website, mark the date for the congress and join us in Fabriano and Amalfi in 2014.

Every year conferences, seminars, annual meetings and other events of importance are organized by the local and national associations of paper historians. This year the 10th AHHP conference was celebrated in Madrid with a rich and admirable programme illustrating the importance of the paper historical research in Spain and its connections to international paper history.

Liebe IPH-Mitglieder,

inzwischen waren die Redner und das Programm-Komitee des IPH-Kongresses 2012 in der Oberrhein-Region sehr aktiv und haben die endgültigen Manuskriptfassungen der Vorträge erstellt und zusammengetragen. Dank unserer allseitigen und fruchtbaren Kooperation kann der Band jetzt in Druck gehen, und Sie können sich auf die Ankunft des Kongress-Bandes 19 (2012) noch in diesem Jahr freuen.

Ich hoffe, dass Sie das Buch inspiriert, Vorschläge für Vorträge auf dem 32. Kongress 2014 in Italien einzusenden. Bitte beachten Sie den Call for Papers der Kongressorganisatoren aus Fabriano in dieser Herbstausgabe der IPH-Zeitschrift und auf unserer Website, notieren Sie sich das Kongressdatum und treffen Sie zu uns im nächsten Jahr in Fabriano und Amalfi.

I have learned from my participation in the conference in Spain and the annual meetings in NPH in Finland and DAP in Germany that interest and research in paper history has not been weakened by the economic regression. Much inspiration is to be found during these meetings with other people, dedicated to the history of paper. It is of course not possible to join all the paper historical events taking place, but our periodical and website gives a possibility to spread a little bit of the news in publication of papers from these meetings. In this autumn issue you will therefore find a paper, presented at the AHHP conference in Madrid by Emanuel Wenger and Marisa Ferrando Cusi and B. Lönnberg's paper from the Annual NPH meeting in Finland.

In June in this beautiful summer the sad news were spread that two dear old members of IPH are no longer among us. Our Honourable member of IPH from Switzerland Suzanne Ackerson-Addor and Diplom Ingenieur Elgar J. Chr. Drewsen from Germany will be remembered with love and admiration!

Anna-Grethe Rischel

President of IPH

In jedem Jahr werden Konferenzen, Seminare und Jahrestreffen von lokalen und nationalen Vereinigungen von Papierhistorikern organisiert. In diesem Jahr wurde die 10. AHHP-Konferenz in Madrid mit einem bewundernswerten und vielfältigen Programm gefeiert, das die Bedeutung der papierhistorischen Forschungen in Spanien und ihre Verbindungen mit der internationalen Papiergeschichte zeigte.

Bei meiner Teilnahme an der Konferenz in Spanien und den Jahrestreffen der NPH in Finnland und des DAP in Deutschland habe ich festgestellt, dass das Interesse an Papiergeschichte und entsprechenden Forschungen von der ökonomischen Rezession nicht beeinträchtigt worden sind. Diese Treffen mit anderen Menschen, die sich der Papiergeschichte widmen, können sehr inspirierend wirken. Zwar ist es nicht möglich, an allen papierhistorischen Ereignissen teilzunehmen, aber unsere Zeitschrift und die Website bieten die Möglichkeit, einige der neuen Erkenntnisse durch die Veröffentlichung der

Vorträge bei diesen Treffen zu verbreiten. So finden Sie in dieser Herbstausgabe einen Vortrag, der bei der AHHP-Konferenz in Madrid von Emanuel Wenger und Marisa Ferrando Cusi gehalten wurde sowie B. Lönnbergs Vortrag auf dem Jahrestreffen der NPH in Finnland.

Im Juni in diesem wundervollen Sommer wurden die traurigen Nachrichten verbreitet, dass zwei unserer geschätzten und langjährigen IPH-Mitglieder

nicht mehr unter uns sind. Wir werden unserem IPH-Ehrenmitglied aus der Schweiz, Suzanne Ackerson-Addor, und dem Diplom-Ingenieur Elgar J.-Chr. Drewsen aus Deutschland mit Liebe und Bewunderung gedenken.

Anna-Grethe Rischel

Präsidentin der IPH

Chers membres de l'IPH

A la suite du congrès 2012 de l'IPH en région du Rhin Supérieur, une intense activité de collecte, rédaction et mise en page des manuscrits a commencé. Grâce à la coopération fructueuse entre les auteurs et le comité de programmation du congrès, nous sommes maintenant prêts à lancer l'édition, et vous pouvez vous attendre à recevoir les actes du congrès de l'IPH 2012, volume 19, avant la fin de l'année.

Il est à espérer que cet ouvrage constituera une source d'inspiration pour proposer de nouvelles communications dans le cadre du 32ème congrès de l'IPH qui se tiendra en Italie en 2014. Veuillez noter l'appel à communiquer de l'organisation du congrès de Fabriano paru dans ce numéro d'automne de notre revue de l'IPH ainsi que sur notre site, et inscrire dans vos agendas la date du congrès pour nous rejoindre à Fabriano et Amalfi l'année prochaine.

Chaque année, conférences, séminaires, réunions annuelles et autres événements marquants sont organisés par les associations locales ou nationales d'historiens du papier. Cette année, la 10ème conférence de l'AHHP a été célébrée à Madrid par un riche programme illustrant admirablement l'importance de la recherche dans le domaine de l'histoire du papier en Espagne et ses liens avec l'histoire internationale du papier.

J'ai pu me rendre compte, lors de ma participation à la conférence en Espagne, de même qu'à la réunion annuelle du NPH en Finlande ou encore au DAP en Allemagne, que l'intérêt pour la recherche en histoire du papier n'a pas été affaibli par la crise économique. Rencontrer d'autres personnes qui se consacrent à l'histoire du papier est une grande source d'inspiration. Bien sûr, il n'est pas possible de participer à tous les événements ayant trait à notre domaine, mais notre périodique et notre site internet nous permettent de diffuser quelques nouveautés parues dans les publications de ces réunions. Ainsi, dans cette édition d'automne, vous découvrirez un article présenté à la conférence de l'AHHP à Madrid par Emanuel Wenger avec Marisa Ferrando Cusi, ainsi que l'article de B. Lönnberg, présenté à la réunion annuelle du NPH en Finlande.

Au cœur de ce beau mois de juin estival, de tristes nouvelles nous sont parvenues, deux anciens membres de l'IPH nous ont quittés : Suzanne Ackerson-Addor, membre d'honneur de la section suisse de l'IPH, et Elgar J.-Chr. Drewsen, ingénieur, membre de la section allemande. Nous nous souviendrons d'eux avec amour et admiration !

Anna-Grethe Rischel

Présidente de l'IPH

Suzanne Ackerson-Addor (1919 – 2013)

Obituary

In this wonderful spring IPH has lost our dear Honourable Member Suzanne Ackerson-Addor. She died 28/05 in Arzier 94 years old. Since 1969 she has participated in IPH congresses and contributed with numerous papers to IPH Yearbooks, to IPH Information and to SPH- Kontakte. In 2009 her article “Paper at the Jesuit Missions of South America” was published in the first number of the restarted periodical IPH Paper History, and in that connection our correspondence started. It continued with her beautiful handwritten letters on decorated handmade papers until the end of May, when I received her book “Life: what an adventure! Roundtrip Switzerland-America”! Her book was accompanied by a small handwritten greeting, dated May 17th 2013 on greyish/green paper, made of recycled U.S. Currency with the printed text “There’s nothing like OLD MONEY”.

I could not stop reading the book, because I was spell-bound by the wonderful and vivid description of her life and her strong dedication to books, paper, paper production and the history of printing in Argentina, America and Switzerland.

Suzanne Ackerson-Addor was born January 29th 1919 in the Province of Misiones in Argentina. Her parents Ernest François Addor and Hélène Addor-Pitton had emigrated in 1909 from Sainte-Croix, Canton de Vaud in Switzerland to Paraguay, and they settled in 1914 with their four children in San Ignacio in the Province of Misiones in North Argentina, where Ernest François Addor worked at new important plantations. The ruins of the nearby early Jesuit Missions in this region fascinated Suzanne Ackerson-Addor. In her book, she describes this place of so much importance for her life:

“In 1926 the sub-tropical forest seemed ready to claim back its territory, invading the collapsed walls. Amidst this wild vegetation you could find bitter orange trees, and cows, let loose everywhere, would climb over the fallen stones to reach for the juicy fruit... In this hot climate, it is a habit to take a rest after lunch “the siesta”. I used to slip out and roam around in the silent ruins. The hot air was filled with the scent of orange blossoms. I discovered so



many little plants, ferns, mosses, insects, alive in the sculptured, half buried, fallen stones – a whole dream world. And I dreamed I lived in my own beautiful dream. Much, much later, when my love for precious books and for the Art of Bookbinding made me look for the earliest books printed in Latin America, I found that History was intimately related to those dreams of my early life. Indeed, I found in the great libraries of the world, the rare copies printed in the Jesuit Missions of Loreto, San Javier, Santa María la Mayor, of what is today the Province of Misiones”.

In her paper, published 2009 in the periodical IPH Paper History, Volume 13, Issue 1, she wrote: “I especially wanted to know more about the remarkable books first printed in this remote sub-tropical region. Their Colophon said: “Printed in Santa María la Mayor”; “en el pueblo de San Javier”; “Nuestra Señora de Loreto”...I wondered how books could be printed, on pages of white paper which had travelled so many miles under such difficult conditions.”

At the age of twelve she learned to drive a car, her father became her companion and she shared her free time following him and listening to the discussions of working problems of the local people. Getting into these people’s huts, she realized the true problems facing them and decided to study nursing. In those days, the only worthy school of nursing in Argentina was the British Hospital of Buenos Aires, the only accepted language here was English, and Suzanne Ackerson-Addor started her education there in 1937. Three years later she received her diploma, but after her marriage with the young

doctor William W. Dub from Austria she decided to leave the hospital. When their children Alex Dub-Addor and Odette Dub-Addor were 15 and 10 years old, she had more free time and decided to take book-binding lessons. Book-restoration became a new part of her life after a couple of years, and soon paper became the most important part of the book and filled her life with joy.

In her book “Life: what an adventure!” the following beautiful words illustrate, how her childhood and experiences in life made her to the remarkable person, so full of optimism and joy, that we met in IPH and admired:

“I always find that life is to be compared to a book. Every now and then, you turn a page, sometimes a chapter. Then, all of a sudden, you shut a whole volume. Life goes on. So you have to open another volume, which in turn, becomes pages, chapter ...and every time you learn to adapt, find your equilibrium: survive, as best you can”.

1968 became the end of a whole volume for Suzanne Ackerson-Addor, when William Dub died and she decided to leave Argentina and return to Switzerland to the books and archival studies waiting for her. Here she heard about IPH and participated in her first IPH Congress 1969 in Amalfi. In the very same year she did find a new way of life, when she met Garret G. Ackerson from USA that became her second husband. In 1992 she lost her dearest husband after 23 happy years of marriage, but she did not retire. She decided to open a new volume of books and continue with her studies of the history of paper, printing and the art of bookbinding in Switzerland and Argentina and participate in the IPH congresses and publish papers. She presented her last paper “L’Encyclopédie d’Yverdon de F.-B. Felice” in 2010 at the 30.IPH Congress in Angoulême with the celebration of the 50 years anniversary of IPH, and two years later we met again in 2012 at her last IPH Congress in the Upper Rhine Region.

I cannot end this obituary in a better way than by citing the last words of her article paper in the restarted periodical IPH Paper History, Volume 13, 2009:

“My life with paper and books goes on, keeping up with development of conservation, new methods

of investigation, modernisation of methods of information and with internet possibilities. IPH offers great opportunities of communications. As long as I can, I will be part of it.”

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Anna-Grethe Rischel

Elgar Drewsen (1926-2013)

Papieringenieur, Papierfabrikant, Papierhistoriker

Über sieben Generationen trugen Papiermacher den Namen Drewsen, seitdem Abkömmlinge des Kaufmanns Johann Drewsen, dessen Heirat 1660 im südlich von Hamburg gelegenen Buxtehude verzeichnet ist, diesen Beruf in Dänemark und in Deutschland ausübten. Mit dem Tod von Elgar Johann-Christian Drewsen, der am 15. Juni 2013 gestorben ist, hat diese über mehr als drei Jahrhunderte andauernde professionelle Beständigkeit ein Ende gefunden, wenngleich der Name der Familie durch die Firma Drewsen Spezialpapiere GmbH & Co. KG, Lachendorf, mit dem Papiermachen verbunden bleibt.

Elgar Johann-Christian Drewsen war am 13. April 1926 als Sohn des Lachendorfer Papierfabrikanten Walther Drewsen (1882—1966) zur Welt gekommen, seine Mutter Hedwig-Maria (Hedela) Drewsen, geb. von Bernuth (1895—1987) war die zweite Ehefrau des Papierfabrikanten. Aus dessen erster Ehe mit Paula Josepha Drewsen, geb. von Elpons, stammten drei Kinder. Ältester Sohn war Horst-Winfried Drewsen (1908—1956), ein promovierter Volkswirt. Auf Wunsch des Vaters übernahm dieser nach dem Zweiten Weltkrieg die Aufgabe der Wiederinbetriebnahme der Lachendorfer Papierfabrik. Die Alliierten gewährten hierzu die Erlaubnis, so dass die Fabrik am 22. August 1946 wieder Papier produzieren konnte. Doch die weitere Aufbauarbeit war so aufreibend, dass Horst-Winfried Drewsen einen schweren Herzanfall erlitt und drei Wochen später am 10. November 1956 starb. Sein Halbbruder Elgar Drewsen hatte zu diesem Zeitpunkt Papieringenieurwesen studiert und arbeitete zwei Jahre in einem Werk der West Virginia Pulp & Paper Co. in Pennsylvania. 1958 heiratete er Marie-Luise, geb. Freiin von Lützow. Das Paar bekam zwei Töchter und zwei Söhne, doch keines der Kinder wurde Papieringenieur oder heiratete branchenbezogen.

Als Elgar Drewsen 1959 aus den USA zurückkehrte, hatte das väterliche Unternehmen zwischenzeitlich in dem Papier- und Zellstoffgroßhändler Gustav Schürfeld (1904—1977) in kritischer Finanzlage



Elgar Drewsen beim IPH-Kongress in Polen 2004 (Museumsbesuch in Wrocław). Foto: Frieder Schmidt

einen Retter gefunden, der zunächst 50 Prozent der Unternehmensanteile übernahm. Seit 1. Oktober 1959 firmierte das Unternehmen als Georg Drewsen Feinpapierfabrik GmbH & Co. KG. Schürfeld baute im Lauf der Jahre infolge von Kapitalerhöhungen seine Anteile noch weiter aus. Gesellschafterverträge sahen vor, dass es eine familienunabhängige Geschäftsführung geben sollte, weshalb sich Gustav Schürfeld und Elgar Drewsen 1974 aus der Geschäftsführung zurückzogen und das Unternehmen über einen neu gebildeten Beirat begleiteten.

Diese Situation bot Elgar Drewsen Möglichkeiten, sich immer wieder verschiedenen Aspekten der Unternehmensgeschichte, der Geschichte der eigenen Familien und auch der Papiergeschichte im Allgemeinen zu widmen. Als Zwölfjähriger hatte er 1938 miterlebt, wie in Lachendorf das 400-jährige Bestehen des Unternehmens gefeiert wurde. Man lud die gesamte Belegschaft in das Celler Schlosstheater ein, denn im dortigen Welfenschloss hatte 1538 die Siegelung der Gründungsurkunde der Papiermühle an der Lachte stattgefunden. Über

diese Festivitäten wissen wir heute genau Bescheid, weil Elgar Drewsen sie 2007 zusammen mit Florian Friedrich in dem Buch „Papier aus Lachendorf seit 1538. Geschichte eines Familienunternehmens“ festgehalten hat, das auch die Fotos der damaligen geschmückten Festwagen zeigt.

Seit 1714 lässt sich der Name Drewsen in Verbindung mit dieser Papiermühle nachweisen, denn damals hatte der Papiermacher Marcus Drewsen (1678–1724) die Tochter des Lachendorfer Papiermachermeisters, Elisabeth Magdalene Pfuhl, geheiratet und trat in den Pachtvertrag für die Lachendorfer Papiermühle ein. Der Bruder dieses Papiermachers, Johann Drewsen (1667–1734) war 1693 von der dänischen Königin Charlotte Amalie (1650–1714) für die Leitung der nördlich von Kopenhagen gelegenen Papiermühle Strandmollen berufen worden, sein gleichnamiger Neffe aus Lachendorf, Johann Drewsen (1715–1776), wurde sein Nachfolger und begründete den dänischen Zweig der Familie. Zu den bedeutendsten Vertretern dieses Zweigs gehörte Johann-Christian Drewsen (1777–1851), der 1828 die erste, aus England stammende Papiermaschine Dänemarks erwarb. Dieses Ereignis wurde 100 Jahre später mit einem schönen Wasserzeichenblatt gefeiert, das nicht nur diesen Papiermacher, sondern auch einen Riss dieser Papiermaschine zeigt. Elgar Drewsen trug mit seinem weiteren Vornamen Johann-Christian einen Teil dieses dänischen Erbes weiter, und es kann nicht verwundern, dass von Lachendorf aus in den 1990er Jahren Versuche unternommen wurden, die 1854 in Silkeborg/Jütland gegründete Papierfabrik als eine Tochtergesellschaft (Drewsen Silkeborg Papirfabrik A/S) zu erhalten, der jedoch im Jahr 2000 mit der Stilllegung der Fabrik endete. All diese Details kann man in den einschlägigen Veröffentlichungen des Verstorbenen nachlesen.

Leicht übersehen wird jedoch, dass der stets leise und zurückhaltend auftretende Papierexperte sich lange Jahre auch für die Papiergeschichte im Allgemeinen engagierte. Mehr als zwei Jahrzehnte lang war er als Obmann des Fachausschusses für Papiergeschichte und Wasserzeichenkunde im Verein der Zellstoff- und Papier-Chemiker und –Ingenieure (Verein Zellcheming) tätig. Dieser Fachausschuss war 1937 als ein Unterausschuss auf Betreiben des Vereinsvorsitzenden Hellmuth Müller-Clemm gegründet worden. Als Obmann

fungierte in den folgenden Jahrzehnten Armin Renker (1891–1961). Das Hauptinteresse galt der in Mainz geschaffenen Forschungsstelle Papiergeschichte. Diesem folgte als Obmann Guido Dessauer, in dessen Ägide vor allem die Verlegung der Forschungsstellen von Mainz an das Deutsche Museum und die dort intensiv zu betreuenden Neugestaltung der Papierabteilung fallen. In den späten 1970er Jahren tagte das Gremium kaum noch, doch zahlreiche seiner Mitglieder nahmen an den IPH-Kongressen in Manchester (1978) und Basel (1980) teil. Bei einer Sitzung des Fachausschusses im Deutschen Museum in München am 9. Dezember 1982 verabschiedete sich Guido Dessauer von seiner bisherigen Funktion, und Elgar Drewsen wurde zum Obmann gewählt. Die Liste der Mitglieder und vor allem auch der Korrespondierenden Mitglieder war international und in fachlicher sowie persönlicher Hinsicht beeindruckend. Zusammen mit Gottfried Schweizer, der als Stellvertreter und Schriftführer fungierte, dann mit Alfred Hoesch, der diese Funktion bis zu seinem Tod im Jahr 2003 übernahm, kam es wieder zu kontinuierlicher Fachausschussarbeit. Als der Fachausschuss am 3. Mai 1985 in Düren tagte, berichtete Theo Gerandy über die Wasserzeichenerschließung mittels Personal Computer. Hier und im Bereich der Analyse von Papierschäden und möglichen Restaurierungsmaßnahmen zeichneten sich interessante Betätigungsfelder für eine technisch-wissenschaftliche Vereinigung ab. Sicherlich hätte sich Elgar Drewsen zur Unterstützung seines Fachausschusses noch die Mitarbeit einiger hochkarätiger Spezialisten aus der Papierwirtschaft gewünscht. Nachdem in Deutschland die Jahre 1989/90 große politische und wirtschaftliche Veränderungen gebracht hatten, entstand im Herbst 1990 bei einer papiergeschichtlichen Tagung am Deutschen Technikmuseum in Berlin der Deutsche Arbeitskreis für Papiergeschichte (DAP). Elgar Drewsen sah, dass sich hier ein lebendiger Arbeitszusammenhang entwickelte und suchte in vielfacher Weise die Zusammenarbeit.

Zudem nahm er maßgeblichen Einfluss darauf, dass die Wasserzeichenersammlung der Forschungsstelle Papiergeschichte vom Deutschen Museum an das Deutsche Buch- und Schriftmuseum in Leipzig abgegeben wurde. Die Einverständniserklärung hierzu trug nicht nur die Unterschrift von Dr. Otto Mayr (Deutsche Museum), Prof. Klaus-Dieter

Lehmann (Deutsche Bibliothek) und Dipl.-Ing. Wolfgang Furler (Zellcheming), sondern auch die von Dipl.-Ing. Elgar Drewsen als zuständigem Fachausschussobmann. In den folgenden Jahren begleitete er die Erschließungsarbeit und Auskunftstätigkeit in Leipzig stets mit wohlwollendem Interesse.

Als der DAP 1995 auf Einladung von Georg Mandl in Netstal (Schweiz) tagte, regte Elgar Drewsen an, den Fachausschuss für Papiergeschichte und Wasserzeichenkunde zugunsten der Mitarbeit bei DAP und IPH aufzugeben. Wir baten ihn inständig, dies nicht zu tun, weil wir für viele Themen auf die Unterstützung einer technisch-wissenschaftlichen Fachvereinigung hofften. Guido Dessauer bewirkte, dass der Jahrzehnte alte „Fachausschuss Papiergeschichte und Wasserzeichenkunde“ in „Fachausschuss Archäometrie des Papiers“ umbenannt wurde. Unter dieser Bezeichnung legte Elgar Drewsen Rechenschaft über dessen Tätigkeit in der Festschrift zum 100-jährigen Bestehen des Vereins Zellcheming ab.

Mit Freude und großem Interesse waren Elgar Drewsen und seine Gattin 2004 beim IPH-Kongress in Polen, um in Duszniki -Zdrój das Papiermuseum zu besuchen und auf Exkursionen Neues zu entdecken. Unvergesslich bleibt einem großen Kreis papiergeschichtlich Interessierter die Tagung des Deutschen Arbeitskreises für Papiergeschichte (DAP), die uns 2009 auf Einladung von Elgar Drewsen nach Celle und nach Lachendorf führte. Der rüstige Herr war mit dem Fahrrad unterwegs

Paper Museum Terras De Santa Maria. Portugal

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A patronage agreement was signed on 18 September 2013, establishing a partnership between the Paper Museum Terras de Santa Maria and the Portucel Soporcel group, one of Portugal's largest and highest profile pulp and paper manufacturers and European leader in the office and printing paper segment. Under this new patronage agreement, the Paper Museum will add to its existing visitor attractions with a new exhibition entitled *From Forest to the Paper*, funded in full by the Portucel

und ließ uns an seiner Freude teilhaben über das „Haus der Papiergeschichte“, das dank seiner Initiative im ehemaligen Häuslingshaus des Olen Drallen Hoff in Lachendorf entstanden ist. Für alle diese Impulse sei ihm herzlich gedankt.

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Frieder Schmidt (Leipzig)

Soporcel group and due to open in early summer 2014.


museu do papel terras de santa maria
Logo: Paper Museum

The Paper Museum has been included in the Portuguese Museums Network since May 2002, and is one of the country's leading industrial museums. It has played an important role in educating the general public not just about the History of the Paper Industry, but also of the dynamism and modernity of this industry, in Portugal.



Paper Museum: the two ancient paper mills of the early nineteenth century

Located in Paços de Brandão, in Santa Maria da Feira, this is the first Portuguese museum devoted to the History of the Paper Industry. Housed in two old paper mills dating from the early 19th century, it functions as both museum and as a working mill. This is the museum's distinctive feature, allowing visitors to observe the different raw materials being used to manufacture the paper as they follow the production sequence. They are guided in this process by simple signs and support from the museum's cultural and educational staff.

At the same time, whilst keeping intact the industrial character of the original mill buildings, new areas have been created to enable the site to function as a museum, including reception areas, a document centre, the educational department, an auditorium and temporary and permanent exhibition areas.

The Paper Museum has close ties with the paper community, both in its local region, where the art of papermaking has been passed down from generation to generation over more than three centuries, and countrywide, having since the outset played an important role at national level. Its collection has accordingly been enriched by donations from various paper mills from the main historical centres of the industry in Portugal, and in particular from region centred on Tomar.

On their route around the museum, visitors are first familiarized with the process of producing paper by hand from linen and cotton (an art which in Portugal dates back to the early 15th century and persisted into the mid-19th century). They then have the chance to observe the process of continuous paper production, in the "Machine Room", where a small, round machine, dating from the 1940's, still produces recycled paper.

Recycling has in fact provided the focus for the main educational message transmitted by the

Paper Museum in recent years. Without neglecting this facet of the display, the Museum now intends to complement this perspective with a fuller exploration of the raw materials traditionally used in paper manufacture, allowing for fresh interpretation of the meaning of Pulp and Paper Industries today, in line with the aims originally defined for the development of the Paper Museum.

from forest to the paper

Logo: *From Forest to the Paper*

Thanks to patronage from the Portucel Soporcel group, a new permanent section "From Forest to the Paper" will now be added at the end of the visitors' route. The display in the new section will outline the search for new raw materials as alternatives to rags and used paper. This will start with the pioneering attempts to manufacture paper from pine wood, thought to have been made in the early 19th century in Portugal, at the Quinta da Cascalheira paper mill, in Vizela, looking in turn at the use of straw from wheat and other cereals, with occasionally excellent results, and then of course at the breakthrough in 1957, when bleached eucalyptus pulp was manufactured for the first time in the world using the sulphate method, by the technicians at Companhia Portuguesa de Celulose, today the Cacia Mill belonging to the Portucel Soporcel group.

This new exhibition area will provide information and the opportunity to interpret the sustainable cycle of paper production from virgin fibre, showing the diversity of Portuguese paper products and the vitality and modernity of today's pulp and paper industry, featuring in particular the new Setúbal Paper Mill, which started up in 2009, home to the world's largest and most sophisticated machine for producing fine paper for office and printing use.



Mallet from the ancient Paper Mill Porto de Cavaleiros, in Tomar

The new exhibition will also illustrate the efforts made in recent years, by pulp and paper manufacturers, and the Portucel Soporcel group in particular, to build a sustainable society, by adopting good practices in forestry management and making a real contribution to conserving the environment and biodiversity. Through the exhibits on display and the use of new technologies, visitors will be able to interpret and understand the messages conveyed by this new exhibition area, which will involve significant use of multimedia and interactive contents, aimed primarily at younger age groups. The new section will in fact be partly targeted at school groups, and will lead on to new projects to be undertaken by the Paper Museum's cultural and educational departments.

grupo Portucel Soporcel

Logo: Portucel Soporcel group

This patronage agreement is in line with the Portucel Soporcel group's policy of social responsibility and its specific aim of supporting cultural and educational projects with a view to preserving and adding value to Portugal's woodlands and its forest-based products. The Portucel Soporcel group is a vertically integrated forestry group with its own forestry research institute, and leads the world in the genetic improvement of the Eucalyptus globulus. It operates Europe's largest nurseries for certified forestry plants with annual production capacity of approximately 12 million certified plants of various species, destined for use in renewing Portugal's woodlands. The leading European manufacturer, and the 6th largest in the world, of uncoated woodfree (UWF) printing and writing paper, it is also Europe's top producer of BEKP (Bleached Eucalyptus Kraft

Pulp), and the 5th largest in the world. Its position as an international frontrunner in its sector, its contribution to the Portuguese economy and the strategy of growth and innovation it has pursued, together with its credentials for business ethics and sustainability, led to the Group being named, in June 2013, as European Business of the Year, in the European Business Awards.

This new partnership with the Portucel Soporcel group is therefore both an honour and a challenge for the Paper Museum, and marks the start of a new phase in the history of an institution which was visited by the members of the International Association of Paper Historians, as part of the 24th IPH Congress, held in the city of Porto. Back in September 1998, the Paper Museum was still at a very embryonic stage. Over recent years, as the first and only museum devoted to the history of the paper industry in Portugal, it has established itself with a dynamic and creative approach, setting it apart from other cultural sites in the country. In recognition of its strong identity, coherent museum design and the originality of its projects, the Paper Museum was awarded the prize for "Best Portuguese Museum 2011" by the Portuguese Museological Association (APOM), and has been included since 2012 in The Best in Heritage - Excellent Club Member, following on from its representation at The Best in Heritage International Conference, held in Dubrovnik, Croatia.

We are confident that, with the opening of the exhibition "From Forest to the Paper", 2014 will be another landmark year in the history of this young Portuguese museum, dedicated to a theme which is important and dear to all of us in the IPH family: the History of Paper.



The ceremony protocol Patronage in the Paper Museum Terras de Santa Maria.

The Jesuit Antique Library in Argentina

Susana Brandariz
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I have talked several times with our dear Suzanne Ackerson-Addor about special memories of her childhood experience at the Province of Misiones in Argentina, where she was borne very nearly the Jesuit Missions in this region and about my daily labor at the Jesuit Antique Library in Argentina. She used to ask me about everything I was in touch with – the “ex-libris”, the watermarks and other issues regarding the books and documents belonging to the Archive. Since she was so fascinated about it, I suggested to Mrs. Rischel to make a short overview of the place where I work as paper conservator. This is a brief summary of a very special place, where respect, humility and study become daily coworkers.

For the Jesuits that came to America in early years of the 17th century, books represented the best that they could bring from the old to the new world; they were the cornerstones on which to build something new.

Thousands of books were sent along with the other necessary goods to the villages and homes in almost all of the ships that departed with missionaries. These books were not only taken to academic centers or residences, but thousands of them were also major libraries in the Jesuit Missions in South America that began in Brazil and then spread to what is now Argentina, Bolivia and Paraguay. Some of the ex-libris manuscripts of the books testify this, as for example: “*Del Pueblo de los Apóstoles*”... “*De la Estancia de Jesús María*”...

In each village there was a library. The bibliographic heritage of the Jesuit Province of Paraguay was estimated in fifty-six thousand volumes, according to the amounts included in the catalogues sent to their superiors. This whole group of books formed what was called *La Librería Grande*.

When the Jesuits were expelled from America (1767) by the order of the King of Spain Carlos III, all the books were dispersed all over the area: some of the volumes constituted the nucleus of the *Biblioteca Nacional* in Buenos Aires, others were

taken to Cordoba city to the *Universidad Nacional de Córdoba*, many of them ended up in private collections, but others were lost permanently.

When the Jesuits came back, in the middle of the 19th century, they assumed again an important educational work. It was probably during this period that some of the books belonging once to the old libraries, returned into the hands of their original owners.

This Antique Library has been formed due to the great effort of a group of Jesuits that wanted to collect all the material from the 15th to the 19th century that was completely dispersed and deposited in Jesuit libraries in Argentina in the provinces of Mendoza, Santa Fe, Córdoba and Buenos Aires. The main purpose was to stabilize and keep the books in a single space with the object of their safe guard. They started 10 years ago and they are still working on this.

Considering the quantity and quality of the Archive, the Provincial of the Jesuits in Argentina, Álvaro Restrepo SJ, in 1999 formally constituted “El Fondo Antiguo de la Compañía de Jesús en Argentina” and they gave the collection this name that it still has (<http://www.fondoantiguo.org>)

The Library contains a treasure of more than 12,000 manuscripts and printed works that includes Greek and Latin Classics, books of scientific character, prayer, philosophy and humanities in the most important European fonts.

Among the most important specimens are some books that we called “incunables guaraníticos”,



Here are partial views of the collection



Some views of the Laboratory

printed in the Jesuit missions of Paraguay between 1700 and 1730 by Jesuit priests in collaboration with the aboriginal people of the place “guaranies”. These books are unique pieces of priceless historical and testimonial value to the Society of Jesus as to historians, researchers and those who are responsible for bibliographic safeguarding of the region.

But the great work did not finish by just gathering the books together. They decided to build a conservation laboratory because of the deterioration of some of the copies. They needed basic interventions for stabilization, paying special attention to selected unique specimens, unpublished manuscripts, rare editions, curious contents, etc. Unfortunately, in some cases, biological attack, improper handling, or previous interventions have seriously damaged them. They were treated with respect and professionalism applying the minimum standards of intervention in safeguard of individual testimonials traces.

This Paper Conservation Laboratory, called “Nicolás Yapuguay”, is provided with modern equipment, instruments and materials needed to run the fundamental techniques of conservation of book and paper.

The Project became possible, thanks to the equipment granted by a program of cooperation



of the Government of the Italian Republic through the Italo-Latinamerican Institute (Rome) and the Regional Board of Lazio (Italy). The support was very important, given by the Institute of Society Jesus (Rome) and the Jesuits in Argentina, who helped providing a secure and appropriate room in Buenos Aires.

This laboratory is equipped not only for the treatment of the Jesuit antique books. It is also capable of providing a series of services to libraries, public and private archives, and many courses are furthermore given in order to train people in charge of antique material.

Dear Suzanne, as once you said:

If my eyes were there with you...no rest for me with so much to learn!!!

Thank you, Suzanne, for being my mentor and for so many times source of inspiration and respect for your life and dedication to your great passion... paper and books.

Susana Elena Brandariz

Paper Conservator in charge of the Conservation Laboratory N. Yapuguay
“Fondo Antiguo de la Compañía de Jesús”
Buenos Aires, Argentina

Flood in the Papermill Old Dombach, Bergisch Gladbach, Germany

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After two very hot days we had severe rain-, thunder- and hailstorms in Germany around noon of 20th of June. In the area of Bergisch Gladbach the rainfall was as heavy as it is probably only every three to four hundred years: We had about 55 liters per square meter in less than one hour. The little river Strunde, which drives the water wheel of the Old-Dombach-Mill, always fills very quickly during heavy rains, because its springs are at the bottom of a karst mountain. So on the 20th of June the river and the mill-stream bursted their banks in a short time and flooded around and into the paper mill. The building was flooded through two doors and along the shaft of the mill wheel which in normal times is more than one meter above water level. Our caretaker managed to pile up sandbags in front of the main entrance and so reduced the amount of water which flooded the building. Nevertheless we had two to four inches of water in all the rooms of the ground floor, with the



exception of only three rooms with a little higher floor. Two rooms, one with the stampers, are much lower than the rest of the building, and there the water was even higher than one meter.

Fortunately the flood went down quickly and we could wipe the water out of most of the rooms in a short time. We started with the rooms with wooden floors. To get the water out of the two heavily flooded rooms we had to call the fire brigade (they do not only fight fires but also floods) which only arrived in the evening because of the great number of floods in the area.

Although we managed to remove the water out of most of the rooms in a short time the damage is huge: Many showcases with wooden bottoms, equipment for film presentations, and many installations and exhibition displays were destroyed by water and mud.

Fortunately only two valuable paper exhibits were soaked: Part of the work and samples of Jacob Christian Schaeffer about his experiments with different materials for papermaking (1765) and a little book by G.A. Senger, also about experiments with new raw material (1799). Immediately after a



fireman rescued them out of their showcase we froze them. At the moment they are in the conservation department of the LVR-Landesmuseum in nearby Bonn. After freeze-drying they will be dealt with by a conservator.

Some paper exhibits of little value are lost: beer felts and blotting and filter paper. But we have more of the same in our collection.

Two ancient machines were also flooded: a Hollander beater, built 1888, and a wood grinder, built 1922. The last one has to be cleaned only; the beater was in one of the lower rooms and now has corrosion. It will also be dealt with by a conservator specialized in historical machinery.

So there is no complete loss of any valuable exhibit.

The signals of the insurance company about refunding the damage are positive. But as we have many special displays and installations it will take some time before the museum is restored to its former condition.

Thinking about how to prevent the next flood in the museum - with climate change on its way flood prevention is necessary - we hope that our buildings' department will install flood walls in front of the doors. And we think to make the presentation in the lowest room water proof and install a flood wall there, too, in order to separate it from the next room.

This display of a rag room based on plates in the Encyclopédie and in De La Lande's book about paper making was also flooded.



How to make and organize a watermark database and how to make it accessible from the Bernstein portal. A practical example: IVC+R database

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Abstract

This article gives a recommendation for the minimal requirements to build up a database containing also watermark descriptions. The necessary database fields, the way how to obtain them, and the integration of the database into the international and multilingual internet portal Bernstein – The Memory of Paper are discussed. The watermark research conducted and the data collected at the IVC+R (Unidad de Conservación, Restauración e Investigación. Culturarts. Generalitat Valenciana) are given as an integration example.

Introduction

Watermarks have been collected and recorded systematically for approximately 200 years. The main motivation to do this is the identification and dating of manuscripts, documents, prints, drawings, etc. on paper. For many years, watermarks have been published in numerous watermark catalogues in different languages (French, English, German, Italian, Spanish, Russian, ...) and additionally scattered over many publications on specific subjects (e.g. art history, musicology, ...). A comprehensive list of printed watermark catalogues can be found on the IPH website [<http://www.paperhistory.com> in Literature]. Nowadays, many watermark collections are made accessible to the public in form of digital databases on the web. This makes the search and retrieval of a specific watermark easier and faster. Nevertheless, the growing amount of individual

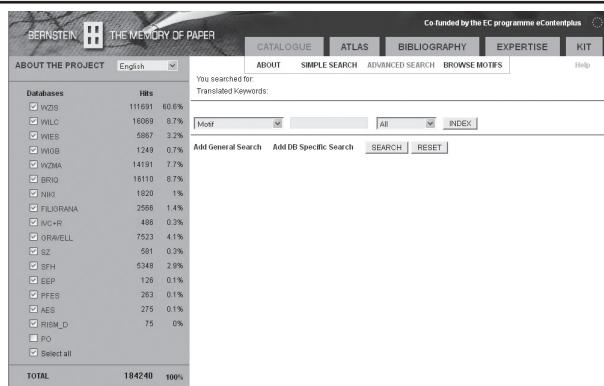


Fig. 1: Bernstein portal www.memoryofpaper.eu with 16 databases

digital databases makes it again difficult to find and exploit all the information sources

The EU project *Bernstein – The Memory of Paper* developed a web portal (<http://www.memoryofpaper.eu>) which allows the multilingual simultaneous access to remote distributed databases independent from their language [1,2]. Currently, Bernstein can access more than 180.000 watermarks from 16 watermark databases (September 2013) (Fig. 1).

Why to connect to Bernstein

Bernstein – The Memory of Paper is a portal to databases distributed remotely and not a database itself. The basic idea of the Bernstein project is, above all, the creation of a technical infrastructure that allows the easy access to information about paper and watermarks. This portal allows the multilingual simultaneous search and retrieval of watermarks in a set of watermark databases. It connects online databases implemented in MySQL or MS-Access. The efforts for the integration of a database to Bernstein are minimal and require on average not more than a few hours.

The Bernstein portal uses “Search/Retrieval via URL” (SRU) protocol for the direct search in the original databases. To realise this protocol, a SRU-gateway was implemented that can be easily configured for each database separately. The mapping between the Bernstein searchable parameters and the database tables and fields is defined in a configuration file (config.xml) [3]. Furthermore the Bernstein server needs read access to the remote database. This is the way how databases like WZIS (Wasserzeicheninformationssystem), WILC (Watermarks in Incunables of the Low Countries),

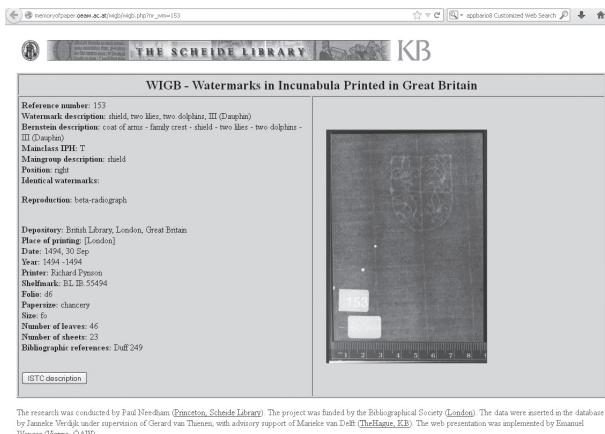


Fig. 2: Direct access to the watermark 153 of the collection *wigt* via a php program: http://memoryofpaper.oeaw.ac.at/wigt/wigt.php?nr_wm=153

and NIKI (Dutch University Institute for Art History, Florence) are linked with Bernstein.

Additionally, Bernstein provides an alternative way to share watermark data with all the other databases in the portal. There are collections of watermarks which are not saved in online databases, but kept in spreadsheets (like Excel) and/or in local not online accessible databases. Bernstein offers the possibility to host this data in a local database on the Bernstein server. The data exported into a spreadsheet is converted into a MySQL database which is searchable by Bernstein through a gateway. A php-program allows the direct access to an individual watermark and its metadata (Fig. 2). This way was chosen by the IVC+R, PFES (Papel y Filigranas en España) and many others.

Database fields

Which fields (parameters) for the documentation and description of paper and its watermarks are necessary? The answer to this question can be found in the IPH (International Paper Historians) standard for the registration of papers with and without watermarks. This standard is both a technical standard of normalized criteria as well as a standard defining criteria and paper or watermark types, fixing their names and specifications in the most important languages, in order to ensure the international compatibility of the paper data. The current version is 2.1 published in 2012 [4].

It is recommended to implement and use the IPH standard, especially if the main focus of a database or a research project is paper and its watermarks. In

many projects and databases however, watermark and paper features serve only as additional but useful information for description, identification, or documentation purposes. For such cases, a small subset of all fields defined by the IPH standard can be sufficient. The following database fields for a watermark description are recommended: reference number, motif, height, width, distance of chain lines, place of use, depository, and date. These are the parameters which are available easily in most cases and can be found in most printed catalogues. Furthermore, these are also the main search fields of the Bernstein portal.

Besides these main parameters, there are additional parameters searchable in Bernstein which are not available in all connected databases. These ‘special search fields’ are: laid line density, IPH class (if the classification of the watermark is not done according the IPH rules), Briquet number, shelfmark, creator (artist, writer, composer, ...), paper mill, and paper maker.

Here are short descriptions of the parameters mentioned above:

- Reference Number.** The reference number is a number or a code which identifies uniquely the watermark within a database. It can be chosen arbitrarily (e.g. consecutive numbers) or (recommended) built according to some rules (e.g. AT5000-230_12: AT... Austria, 5000...Monastery Klosterneuburg, 230... shelfmark, 12...page number). The reference number is often used for the creation of a so-called permalink and should correspond with the name of the watermark image.
- Watermark Motif:** This is the most significant but also most controversial parameter for the description, search, and identification of watermarks. Therefore, this parameter is discussed in a separate chapter below.
- Height and Width:** These are two parameters given in mm which describe the size of a watermark. It is highly recommended to orient the paper so that the chain lines (if they exist) are vertical (Fig. 3).
- Distance of Chain Lines:** This parameter gives the distance between two consecutive chain lines in mm. In many cases, the two chain lines which are the closest to the watermark are considered. If there are more than two chain lines visible the

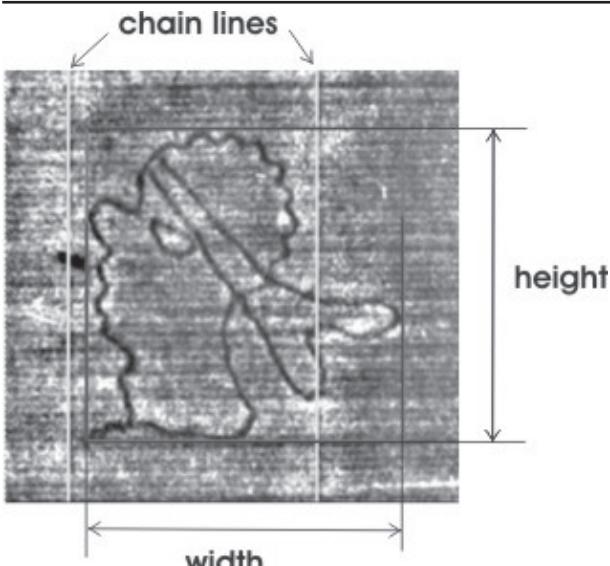


Fig. 3: Watermark with chain lines (oriented vertical)

arithmetic average (mean value) can be taken. The IPH standard allows to specify the number of chain lines and the sequence of distances between them.

- e. *Place of Use*: This is the location (in most cases a city or a region) where the piece of paper was used. This parameter contains geographic information (see chapter below).
- f. *Depository*: This parameter gives the place where the piece of paper is kept nowadays. It is a text field with the name of the institution (museum, archive, library, etc.), the city, and possibly the country. The depository is connected with a geographic position (see chapter below).
- g. *Date*: This is the date when the piece of paper was used, if this information is available. Many printed catalogues and databases mainly contain dated watermarks. The date can be a precise day, a year, or a time interval which is the case quite often. In Bernstein, the date is a year or an interval of years. Hence, for those databases where a precise dating is not possible there should be two parameters for the date, indicating the begin year and the end year of the assumed paper usage.
- h. *Laid Line Density*: This parameter describes the number of laid lines. The IPH standard defines the density as the number of laid lines over a distance of 20 mm, measured along the chain line to the left of watermark or, for papers without watermark, along one of the centre chain lines, first at the bottom of the sheet, second in the middle, third at the top, to be measured even on trimmed sheets.
- i. *IPH Class*: Some watermark databases use a specific, sometimes more detailed description

of the watermark motif, different from the IPH standard but give also the IPH main motif or IPH class with all the descriptions as reference.

- j. *Briquet number*: The watermark catalogue of Briquet was and still is one of the main reference books for the identification and classification of watermarks and hence, the Briquet number is still used as a significant parameter if a similar or identical watermark is found in the Briquet catalogues [5].
- k. *Shelfmark*: The shelfmark is the shelfmark of the object which contains the watermark in the depository. This parameter identifies from where the watermark was taken.
- l. *Creator*: This parameter has different meanings dependent on the usage of the paper. The creator can be the artist of a drawing or a print, a composer of an original score, a copyist, a printer, an author, and so on.
- m. *Paper Mill*: This parameter gives the name of the paper mill and its location. Unfortunately the paper mill and the paper maker are not specified in many cases because they are unknown. It is also a geographic term (see chapter below).
- n. *Paper Maker*: This is the name of the paper maker which should be provided in a normalized way.

Watermark classification and motifs

A clear and strict hierarchical classification of watermarks is necessary when watermarks are published in printed catalogues. The classification is used to order the watermarks systematically and hierarchically so that it becomes easy to find and identify a specific watermark. Unfortunately, nearly each watermark collector has introduced his own classification system which differs in the hierarchy as well as in the terminology. Differences in the hierarchical organisation can be essential because it makes a big difference where to find the watermark if a motif is a *coat of arms with an eagle* or an *eagle with a coat of arms*. The watermark classification is one of the most controversial topic among watermark researchers.

The IPH introduced a standard for the registration of papers with and without watermarks. An important part of this standard is Appendix IA the illustrated index of watermark classes and subclasses. The IPH standard defines 26 main classes (motifs) and a numerous set of subclasses (submotifs).

Unfortunately, most of the big watermark databases do not follow the IPH standard. When the Bernstein portal was developed with four databases, all of them used different watermark classifications and none of them followed the IPH standard. One argument was that the IPH standard is not detailed enough on the one hand and on the other hand has too many main classes.

So, the data providers in the Bernstein project defined a new hierarchical classification system with 11 main motifs (groups) and three levels of submotifs (subgroups) as starting point [6]. This classification was adopted by the WZIS project [7] and has been further developed with up to 10 submotif levels until now. The classification is not finished yet and will still remain a work in progress and a topic of discussion for many years. Main motivation for building a new subgroup is the quantity of watermarks in a group. If a group gets to large, it is subdivided. The IPH standard in its latest version has an Appendix II.3 (Concordance of the most important terms of watermark and paper history used in on-line data exchanges) which will consist of a concordance list between Bernstein/WZIS, the biggest providers of watermarks in the web, and IPH.

The significance of a watermark classification has partially lost its importance in digital databases with their powerful search possibilities. If a search is performed for *eagle* AND *coat of arms* it does not matter how the watermarks are hierarchically organised, they will be found in any way.

More important is a standardised terminology connected with a thesaurus which allows the search across different databases and the automatic translation of watermark terms between languages. Bernstein works with a list of seven languages (English, French, German, Hungarian, Italian, Russian, and Spanish) [8]. Each term in the list appears in all other languages and can be used across all databases independent of their language.

Geographic data

The database fields *place of use*, *depository* and *paper mill* contain location information which can be expressed in form of geographical coordinates (e.g.: Cathedral of Valencia: 39.476667°, -0.374444°). Any selection of watermarks can be visualized in a map showing the distribution of the above mentioned fields



Fig. 4: Display of a search result as map

if the geographical coordinates are available. Some databases like WZIS and the Bernstein portal offer the possibility of such cartographic visualizations using GIS systems (Fig. 4). A further useful set of parameters comes from the NUTS classification which is an European standard providing a hierarchical system for dividing up the territory of the EU into regions [9] (e.g. ES11 is Catalonia, ES13 are the Balear Islands). The Bernstein portal uses the NUTS codes to enable geographical searches not only for cities but also for regions.

Watermark images

Probably the most essential data items of a watermark database are the reproductions (images) of the watermarks. These images allow the direct comparison between watermarks. The oldest recording technique is the tracing which can be found in nearly all of the printed catalogues. This tracing method does not allow to capture the whole paper structure of a sheet. Nowadays, many other methods for the reproduction of watermarks exist [10,11]. These methods differ in quality, availability, safety regulations, and costs. The simplest and fastest way is the rubbing method which is cheap but not allowed everywhere and delivers limited qualities. On the other side are several radiographic methods which produce high quality images, remove the overlaid text but are costly. Digital subtraction photography is a very promising and rather new technique which can produce very good images in many but not all cases.

Very important for the digital photography is that the images have a scale attached which allows the exact size estimation. Tracings, rubbings, and radiographic images are true-size reproductions of the watermarks. The scanning procedure must keep

Filigranas s/XV.xls [Modo de compatibilidad] - Microsoft Excel										
	A	B	C	D	E	F	G	H	I	
1	Nº Ref. Filigrana	Fecha	Depósito	Autor-Signatura	Tipología	Lugar	Encuadernación	Medidas folio	Denominación	
2	1	1450 APPCC	Macià, Lluís / 1512	Natal	Valencia	Pergamino	28'9X21 cm	Objetos/Armas/Estandarte		
3	2	1460-1464 APPCC	Marti Antoni (Rei) / 711	Natal	Segorbe	Pergamino	29'6X21'7cm	Flora/Flor/Tulipán		
4	3	1411 APPCC	Marromà, Joan / 889	Natal	Valencia	Pergamino	31'1X22cm	Marca/sin escudo/otros		
5	4	1421 APPCC	Gisbert, Joan / 271	Natal	Valencia	Sin Encuadernación	29X21cm	Fauna/Cuadrúpedo/Cabeza de buey		
6	5	1406 APPCC	Manso, Bernat de / 683	Natal	Valencia	Pergamino	29X22'3cm	Criatura fabulosa/Drágón/aislado /sin motivo accesorio		
7	6	1406 APPCC	Manso, Bernat de / 683	Natal	Valencia	Pergamino	27'6X20'2cm	Marcas/sin escudo/otros		
8	7	1406 APPCC	Manso, Bernat de / 683	Natal	Valencia	Pergamino	28'9X20'9cm	Montañas/Astros/Sol/aislado		
9	8	1406 APPCC	Manso, Bernat de / 683	Natal	Valencia	Pergamino	29'4X21cm	Flora/Flor /con cinco pétalos		
10	9	1425-1426 APPCC	Joan, Miquel / 836	Natal	Valencia	Pergamino	29'3X22cm	Símbolos/Cuadrúpedo/Cerdo		
11	10	1425-1426 APPCC	Joan, Miquel / 836	Natal	Valencia	Pergamino	29'3x23cm	Figuras geométricas/Un elemento/círculo		
12	11	1425-1426 APPCC	Joan, Miquel / 836	Natal	Valencia	Pergamino	29'9X21'8cm	Objetos/Medios de transporte/Rueda de carro		
13	12	1416-1417 APPCC	Joan, Miquel / 837	Natal	Valencia	Pergamino	29'5X21'6cm	Objetos/Campana/aislado, forma simple,sin motivo accesorio		
14	13	1416-1417 APPCC	Joan, Miquel / 837	Natal	Valencia	Pergamino	29'4X22'4cm	Fauna/Cuadrúpedo/Gato		
15	14	1416-1417 APPCC	Joan, Miquel / 837	Natal	Valencia	Pergamino	29'2X22'5cm	Símbolos/Insignias/Orbe		
16	15	1416-1417 APPCC	Joan, Miquel / 837	Natal	Valencia	Pergamino	29'7X22'3cm	Montañas/Astros/Triple montaña/aislado/con cruz latina		
17	16	1458 APPCC	Marti Antoni (Rei) / 710	Natal	Segorbe	Sin Encuadernación	31'2x22'2cm	Objetos/Indumento/Mitra con flor de lis		
18	17	1458 APPCC	Marti Antoni (Rei) / 710	Natal	Segorbe	Sin Encuadernación	30X21'5cm	Objetos/Estructuras/Columna con cruz		
19	18	1458 APPCC	Marti Antoni (Rei) / 710	Natal	Segorbe	Sin Encuadernación	29'5X21'5cm	Objetos/Instrumentos musicales/Cuerpo aislado orientado horizontal		
20	19	1421 APPCC	Marti, Bertomeu / 69	Natal	Sueca	Pergamino	30'1X21'5cm	Montañas/Astros/Triple montaña/aislado/con cruz latina		
21	20	1403-1404 APPCC	Marti, Bertomeu / 73	Natal	Valencia	Sin Encuadernación	30'2X21'4cm	Símbolos/Insignias		
22	21	1410-1411 APPCC	Marti, Bertomeu / 77	Natal	Valencia	Sin Encuadernación	29'3X22cm	Figuras Geométricas/Tres elementos/círculo-círculo-barra		
23	22	1485-1486 APPCC	Marti, Gaspar / 116	Natal	Valencia	Pergamino	29'7X21'3cm	Símbolos/Insignias/Orbe		
24	23	1493 APPCC	Marti, Gaspar / 117	Natal	Valencia	Sin Encuadernación	29'7X21'3cm	Montañas/Astros/Triple montaña/en círculo, encima cruz latina		
25	24	1493 APPCC	Marti, Gaspar / 117	Natal	Valencia	Sin Encuadernación	28'4X21'5cm	Montañas/Astros/Triple montaña/aislada, encima cruz latina		
26	25	1415 APPCC	Martínez, Joan / 879	Natal	Valencia	Pergamino	29'9X21'4cm	Criatura fabulosa/Unicronio/aislado/media figura		
27	26	1415 APPCC	Martínez, Joan / 879	Natal	Valencia	Pergamino	30x22'2cm	Objetos/Utensilios/Yunke		

Fig. 5: Spreadsheet with watermark data collected by IVC+R

the proportions and should allow an export as pdf in true size.

Database of IVC+R: an example for a successful integration

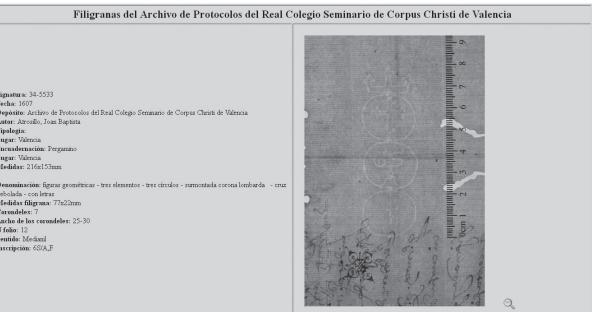
The ‘Departamento de Conservación y Restauración de Material de Archivo y Obra Gráfica’ of the IVC+R, works on the restoration, conservation and research of the documented heritage in the area of Valencia. When the necessary work of restoration of objects from archives and libraries in the community of Valencia is done their watermarks are recorded and described [12,13]. Furthermore, some students from universities in Valencia which did their practical training in the laboratories of the IVC+R got interested in the research of watermarks and performed studies which were used in diploma thesis, publications and communications.

Presently, the work is done in parallel in different directions which are: registration and classification of watermarks which were collected in the last years, insertion into Excel sheets with all the necessary parameters (Fig. 5), and taking of watermark photos in all important archives of the community of Valencia, such as the archive of Alicante, the historical archive of Valencia, the archive of the cathedral of Valencia, the historic library of the university of Valencia and

the archive de protocolos del Real Colegio Seminario de Corpus Christi also in the capital of Valencia.

So far, there are two studies which were part of university diploma thesis and their recorded watermarks published in Bernstein. Both studies were conducted at the Archivo de Protocolos Notariales del Real Colegio de Corpus Christi (APPCC) in Valencia, one with watermarks from the 15th century the other of the 17th century. (Fig. 6).

It was necessary to add supplementary fields to the Excel sheets for the inclusion into the Bernstein portal as mentioned before: reference number (número de referencia), shelfmark (depositario signatura), date (fecha), place of use (lugar de realización),



La investigación fue realizada por Marta Sáez Sánchez y Desamparados Cervera bajo la supervisión de María Ferrando Cui (Instituto Valenciano de Conservación y Restauración). Los datos se insertaron en la base de datos por Emanuel Wagner. La presentación de la página se llevó a cabo por Emanuel Wagner (Vera, GAW). Para obtener más información sobre el proyecto, haga clic aquí.

Fig. 6: Watermark of the Archivo de Protocolos del Real Colegio Seminario de Corpus Christi de Valencia in a presentation of Bernstein

depository (notario al que pertenece, en el caso de los protocolos notariales), motif (tipología de la filigrana según la clasificación Bernstein), page number (número de la página donde se captura), orientation (sentido de la filigrana), sheet size (medidas de la hoja), number of chain lines (número de corondeles en la página), and distance between chain lines (ancho de los mismos).

Conclusion

When the Bernstein project ended in the year 2009 it linked to 4 databases (PO-Piccard Online, WILC-Watermarks in Incunables in the Low Countries, WZMA-Watermarks of the Medieval Ages, NIKI) [14]. Since that time the portal has been developed further and the quantity of searchable watermarks grew. This fact, and the increasing number of page hits prove that the Bernstein portal is successful. There are 16 databases in the portal with more coming soon. The integration of a new database is rather simple. A mapping between the IPH classification and the Bernstein/WZIS classification will become an appendix to the IPH standard. This guarantees its compatibility with the international standard.

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Call for papers

IPH Congress 2014 – FABRIANO / AMALFI –
September 21-27

The 32th IPH Congress of International Paper Historians will take place in **Fabriano and Amalfi**, Italy, hosted by the Italian Study and Research Centre for Paper History and Technology “A.F. Gasparinetti (CISSCA), the Paper and Watermark Museum of Fabriano (MCF) and the Amalfi Cultural and Historical Centre (CCSA).

It will be held from September 21 to 27, 2014 with the following itinerary:

21 September: Arrival in Fabriano
22-23 September: Congress, guided visits and excursions
24 September: Transfer to Amalfi
25-26 September: Congress, guided visits and excursions
27 September: Departure from Amalfi.

The theme of the congress, “**Paper, Changes in (early) Technology and Trade**” will cover these main aspects:

Evolution of the Paper techniques between the 14th and 17th centuries [XIV and XVII]

The attention will be on the evolution of paper fabrication techniques in the “local” entities and also in the “abroad” entities, highlighting in particular the variations rendered necessary with the introduction of printing and typesetting (circa 1460). A specific aspect may concern the continuous and ever increasing requirement of the fundamental raw material, rags.

Paper as a commercial object

Right from the beginning of its appearance Paper has been the object of commerce, contributing to the development of commercial networks that extended throughout all of Europe. We will analyse the transport systems, merchant routes and the more important markets, as well as practices and local customs in relation to the formality of shipping (reams, bales, ... duties, exchange, payment systems).

Anyone wishing to present a paper is invited to send a short abstract (maximum 300 words/ 1500 signs) in English, in word or rtf format, at the latest 9 months before the Congress to the program committee, (December 31, 2014)

Address:

Giorgio Pellegrini, Museo della Carta e della Filigrana,
Largo Fratelli Spacca, 2, I – 60044 Fabriano (AN)
info@museodellacarta.com

and/or

Franco Mariani, CISSCA,
Via M. Bellocchi, 20, I – 60044 Fabriano (AN)
info@centrostudicarta.it

Instructions for proposals:

The abstract should provide: in English (+ either French or German version): - Name, e-mail and/or postal address, professional title of the author(s) – Title of the presentation. - Max 300 words (1500 signs) summary of contents.

The length of the oral presentations at the Congress will be c. 20 minutes. The congress languages are preferably English and French, as well as German; please note that no translation will be provided, except for the written translation of abstracts.

The programme committee will inform the proposers about acceptance of their proposals 31.3.2014, 6 months before the Congress 2014, providing them with guidelines for authors. The full text of the presentation is due before the end of the Congress 2014 as well as a version of the presentation on a CD/ USB-pen (if ready in a definite version).

With our best wishes,
The Organizing Committee (CISSCA/MCF) and Bureau of IPH

Appel à contribution

IPH Congrès 2014 – FABRIANO / AMALFI –
Septembre 21-27

Le 32e Congrès de l'Association Internationale des Historiens du Papier (IPH) se tiendra à **Fabriano et Amalfi**, Italie, sous l'égide de Centre Italien des Etudes et Recherche d'histoire et technologie du Papier "A.F. Gasparinetti (CISSCA), le Musée de Papier et Filigrane de Fabriano (MCF) et le Centre de Culture d'Histoire Amalfitaine (CCSA).

Il se déroulera du 21 au 27 septembre 2014 selon le calendrier:

21 septembre: arrivée à Fabriano

22-23 septembre: Congrès, visites guidés et excursion

24 septembre: transfert à Amalfi

25-26 septembre: Congrès, visites guidés et excursion

27 septembre: départ de Amalfi

Les principaux thèmes, inspirés à l'argument "**Papier, Variations de les premiers Technologies et Commerce**", seront les suivants :

Session 1 – Evolution de la technique papetière entre le XIV et XVII siècle

L'attention sera adressé à l'évolution des techniques des fabrication du papier soit dans le réalité «locale» soit dans l'étrangères avec particulière évidence ou changements nécessaire pour l'introduction de l'estampe à caractère amovible (ca. 1460). Un aspect importante sera relatif à le besoin ininterrompu des matières premières : les chiffons.

Session 2 – Le Papier comme objet de Commerce

Le Papier a été l'objet du commerce, contribuer à le développement de network commercial, qui se sont étendu sur toute l'Europe entière. Serons analysés les systèmes de transport, les routes marchande et les plus importants marchés, c'est adire les emplois et le habitudes locale sur les formalités d'expédition (rames, balles ... droits douanier, échange, façon de paiement).

Toute personne souhaitant proposer une intervention est invitée à envoyer un résumé en Anglais (de 300 mots/ 1500 signes maximum), de préférence sous forme électronique, en format Word ou RTF, au plus tard 9 mois avant le congrès au comité chargé du programme (31.12.2013).

Adresse !

Giorgio Pellegrini, Museo della Carta e della Filigrana,
Largo Fratelli Spacca, 2, I – 60044 Fabriano (AN)
info@museodellacarta.com

et/ou

Franco Mariani, CISSCA
Via M. Bellocchi,, 20, I – 60044 Fabriano (AN)
info@centrostudicarta.it

Instructions concernant les contributions :

Le résumé doit comporter, en Anglais (ou en Français ou en Allemand) : - Nom, adresse électronique et/ ou postale, titres professionnels de(s) l'auteur(s) – Titre de la contribution proposée – Résumé (300 mots/ 1500 signes max.)

La durée des présentations orales lors du Congrès sera d'environ 20 mn. Les langues du Congrès seront de préférence l'Anglais et le Français, ou l'Allemand, aucune traduction ne sera fournie, hormis celle des résumés.

Le comité chargé du programme communiquera les réponses aux propositions 31.3.2014, 6 mois avant le congrès 2014, et fournira aux auteurs retenus les instructions de mise en forme. Le texte complet des présentations doit être remis avant la fin du congrès 27.9.2014, ainsi qu'une présentation sur CD/USB-Pen (si celle-ci est définitive).

Avec nos cordiales salutations,
Le comité d'organisation (CISSCA/MCF) et le Bureau de l'IPH.

Aufruf zum Einreichen von Beiträgen

IPH Kongress 2014 – FABRIANO / AMALFI – September 21-27

Der 32. Kongress des Internationalen Vereins der Papierhistoriker (IPH) wird in **Fabriano** und **Amalfi**, Italien, stattfinden. Die Veranstalter des Kongresses im Jahr 2014 sind: Das Italienische Forschungszentrum für Papiergechichte und – Technologie „A.F. Gasparinetti (CISSCA)“, das Papier und Wasserzeichen Museum in Fabriano (MCF) und das Zentrum für Kultur und Geschichte (CCSA) in Amalfi.

Der Kongress findet in der Zeit vom 21. bis 27. September 2014 statt und wird wie folgt verlaufen:

21 September: Ankunft in Fabriano
22-23 September: Kongressbesuch, Besichtigungen und Ausflüge mit Führung
24 September: Transfer nach Amalfi
25-26 September: Kongressbesuch, Besichtigungen und Ausflüge mit Führung
27 September: Abfahrt von Amalfi.

Die Veranstaltung steht unter dem Motto **“Papier-Entwicklung der (frühen) Herstellungsverfahren und des Handels”** und umfasst folgende Hauptthemen:

Evolution der Papiertechnologie zwischen dem 14. und dem 17. Jahrhundert. [XIV und XVII]

Der Themenschwerpunkt liegt auf der Entwicklung der Papierherstellungstechniken im lokalen und internationalen Vergleich, wobei insbesondere auf die notwendig gewordenen Veränderungen eingegangen wird, die mit der Erfindung des Buchdrucks (ca. 1460) einhergehen. Ein besonderer Aspekt dabei ist der kontinuierliche und ständig steigende Bedarf an Hader als Faserrohstoff in der Papierherstellung.

Papier als Handelsgut

Gleich von Anfang an wird das Papier als kommerzielle Ware behandelt und trägt zur Entstehung von europaweiten Handelsnetzwerken bei. Im Rahmen des Kongresses werden neben Transportsystemen, Handelswegen und relevanten Märkten auch lokale Praktiken und Zollverfahren in Bezug auf die Spedition analysiert (z.B. Ries,

Papierballen,...Zollgebühren, Auswechselung (?) Bartering (?), Zahlsysteme etc.)

Jede Person, die einen Beitrag einreichen möchte, wird gebeten, eine Zusammenfassung in Englisch (max. 300 Wörter oder 1500 Zeichen), vorzugsweise in EDV Form, in Word- oder rtf-Datei, spätestens 9 Monate vor dem Kongress 2014 an das Programmkomitee zu schicken (31.12.2013):

Adresse !

Giorgio Pellegrini,

Museo della Carta e della Filigrana,
Largo Fratelli Spacca, 2, I- 60044 Fabriano (AN)
info@museodellacarta.com

Franco Mariani, CISSCA,

Via M. Bellocchi, 20, I – 60044 Fabriano (AN)
info@centrostudicarta.it

Vorschriften für die Beiträge

Die Zusammenfassung soll in Englisch (+ Französisch oder Deutsch) folgende Punkte enthalten: - Name, elektronische und/oder Postadresse, berufliche Titel des oder der Autoren, - Titel des vorgeschlagenen Beitrags, - Zusammenfassung (max. 300 Wörter/ 1500 Zeichen).

Der mündliche Vortrag während des Kongresses soll circa 20 Min. dauern. Die Sprachen beim Kongress werden vorzugsweise Englisch und Französisch oder Deutsch sein. Es wird keine Übersetzung angeboten, außer denen der Zusammenfassungen.

Das Kongresskomitee wird die Autoren über die Antwort auf ihre Vorschläge vor dem 31. März 2014 benachrichtigen und wird ihnen alle nötigen Informationen zur Abfassung der Texte geben. Der komplette Text der Beiträge soll vor dem Kongressabschluss 27/9 2014 geschickt werden, sowie eine Vorstellung auf CD-ROM/ USB-Pen (wenn sie endgültig fertig ist).

Mit unseren freundlichen Grüßen,

Das Organisationskomitee (CISSCA/MCF) und der Vorstand der IPH.

Wood Pulp Production by C. J. Jansson

Prof. em. Bruno Lönnberg,
blonnber@abo.fi

Presentation at the Annual Meeting of Nordic Paper Historians, Villmanstrand, June 6th, 2013

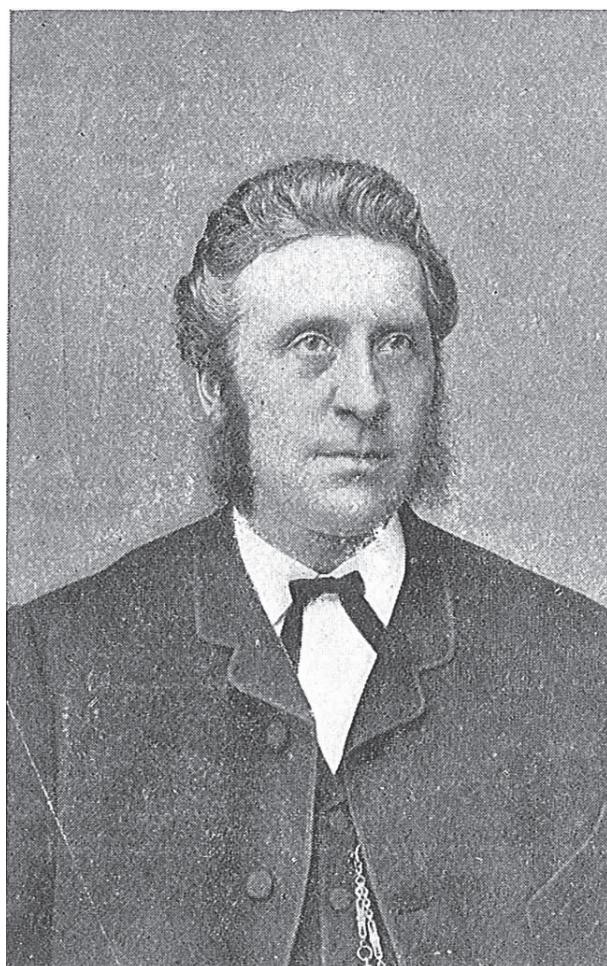
Introduction

Carl Johan Jansson, born in 1846 in the community of Töringe, Stockholm's administrative province, became unless his scarce schooling, an important industrialist in Sweden, Norway and Finland. Another industrialist within the paper industry, Ingwald Sourander of Nokia, made it possible for us to know Jansson so well as we do today. Sourander was wondering at the citations made by professor E. Kirchner in his article of Das Papier related to Werkmeister C. J. Jansson of Tammerfors, Finnland. Jansson's booklet published in 1878 concerned with Holzschliff (groundwood) was cited three times by the professor. – But who was this Mr. Jansson who was active in Sweden, Norway and Finland, where he worked both in Nokia (Sourander's mill site) and for a long time in Tammerfors.

During the active period of Sourander, in the 1920's, it was evident that only a few of the several hundred Finnish paper engineers in fact knew C. J. Jansson and his booklet that was not even given a title in Kirchner's article. Sourander fortunately clarified that the drawings to the two existing groundwood mills in Nokia, in fact had been made in 1878 – 79 by none the less than C. J. Jansson. Subsequently, Sourander started to look for Jansson's booklet, and finally he found two of them, one in the library of Helsinki university and one privately owned in Nokia.

The booklet

Jansson's booklet appeared to be a 39 p. report named "Practical Handbook in Production of Wood Paper and White Groundwood Board". None of Jansson's former Nokia colleagues owned copies of it anymore. The fact that so few booklets finally was available, Sourander explained with the possibility that Jansson's employer bought the unsold printed issue, when it was evident that Jansson in his booklet published new findings of the wood grinding processes. Sourander also found it



likely that the employer would have destroyed the residual issue.

It looks strange that Jansson got the idea to publish his experiences, as he had no education. Already as a child however, Carl Johan got familiar with the Nykvarn paper mill, when his father Gustaf Magnus Jansson, a former agricultural labourer, became servant of managing director Deutgen and other chiefs. Carl Johan did not go to school, but was instead as soon as being capable put to work at the mill, which was the custom those days. He liked to draw, and often he copied machines, machine parts and mill drawings according to his interest. At fifteen years of age he came to the three-year handicraft school of Winckler in Töringe, where he learned wood carpentry and hence even worked as a model carpenter at the paper mill.

Rambling years

C. J. Jansson finally left the Nykvarn paper mill, and perhaps he went to Finland, but not even Sourander is sure about this. But Jansson returned quite soon to Sweden. In the beginning of the 1870s he moved



to Funnefos mill in Norway, where he stayed from about 1873 until 1877, when the mill was destroyed in a fire and Jansson returned to Nykvarn mill. Funnefos appeared to be a good school for Jansson; its paper products were namely able to win the first prize of the 1876 World Exhibition in Philadelphia, U.S.A. The exhibition committee motivated the win with "the paper products were the strongest and the best of all the exhibited wood papers produced by mechanical means". Jansson indicated as well in his booklet that the papers were the strongest ones, because they had been produced just by application of the methods he described in his booklet. In fact, Funnefos mill used advanced methods in wood grinding. For example, the wood logs were treated by water steam or boiled in water prior to grinding. Another advanced concept was also developed in Funnefos, *i.e.* the collergang and its application with regulation of the clearance between the stone and bottom surface.

Jansson returned to Nykvarn and had the opportunity to work in the Teodor Moll Workshop, where he developed the so called colibri steam machine. But he stayed here only for a short time, because he moved again to Finland already in 1878. Jansson

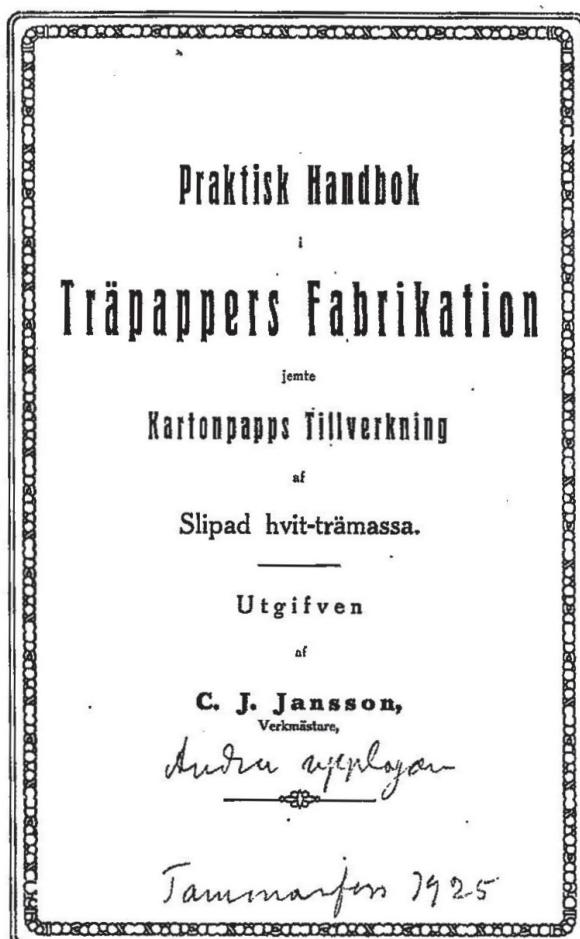
came to Nokia that had two groundwood mills built in the turn between the 1860s and 1870s. The other groundwood mill had been reconstructed after a destroying fire and started to produce pulp again one year before Jansson arrived at Nokia. Nokia mill was apparently producing board of lower quality, since the stock-rooms were full. Jansson increased the stone revolution speed, and simultaneously decreased the feeding pressure. He also introduced shaking sorters, and modified the refiner stone grooves. And he introduced a sharpening tool! In 1879, the once burnt groundwood mill was enlarged with two more grinders. With these changes in the process the product quality was significantly improved, and hence the marketing was successful. - When in Nokia, Jansson also published his booklet "Practical Handbook", and Mr. Erland Jernberg, M. Sc. and teacher of the Junior Secondary School in Tammerfors, made the editing work.

In 1880, Jansson moved to Alstermo in Sweden and now used the title of engineer. During his four years in Alstermo he improved the mill processes the first two years, and after this he became technical leader of the mill. The main development included steaming of the wood logs before chipping, and the chips were then disintegrated and beaten in a two-stage Hollander system.

In 1884, Jansson moved again and went now to Tammerfors (Tampere) in Finland, where he was employed as engineer of the Roofing-Felt Co. (Tammerfors Takfiltfabriks Aktiebolag). And again, he changed the process significantly, for example the wood log steaming and the board machine. By these process modifications Jansson was able to produce board for cartridge cases that had extremely good properties. Cartridge board was those days an important product. The employer really appreciated Jansson, and particularly for his improvements on the board machine. - Jansson died in 1896, only 49 years old, and he was buried in Tammerfors.

Other Papers

Within pulping and paper making also other reports were published. In 1878, the same year as Jansson, Elis Bedoire of Sweden published his 70 p. booklet on "Basics of Paper Production", which however described mainly paper production of rag fibres. Wood pulping and chemical soda pulping were treated on just three pages each. One may thus



consider C. J. Jansson a pioneer of mechanical pulping, *i.e.* “grinding” and “refining” in modern terms.

C. J. Jansson’s “Wood Paper Production”

Because Jansson’s “Practical Handbook” was a too revealing description of the wood pulping, it is possible that the entire edition was bought and destroyed. There was competition already in the 1870’s. However, Jansson was not the only expert that was invited to Finland. Ingwald Sourander pointed out in his introduction to the new edition of Jansson’s booklet that a number of foremen and technicians were invited mainly from Sweden to support the industrial development and production in Finland. And Sourander was adding that “Carl Johan Jansson certainly defenses an honourable position” among these.

So far, Sourander’s research and evaluations, as they appear in his introduction, have been decisive

for this presentation, but from now on Jansson’s booklet is a base for all statements. – Jansson’s goal as given in the Introduction was “to produce wood pulp and paper which regarding strength and consolidation as well as in all other respects would simulate rag paper”. By wood pretreatments Jansson already achieved his goal regarding coarse paper qualities. And in this connection he based himself on the Funnefos success in Philadelphia in 1876, which was due to process improvements introduced by himself. Jansson had also a great vision that “there will be newsgrade papers as well as other coarser, white paper grades that will be produced of wood fibres only”.

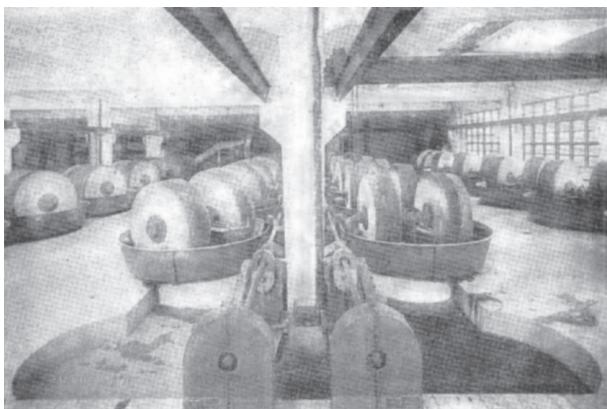
Production of Paper

Mill works. Jansson is describing paper production in his “First Chapter”, which is relatively large, while the shorter “Second Chapter” is treating board production of pulp made of pretreated wood logs or chips.

Jansson starts by explaining that for a daily production of 40 ctr paper, *i.e.* 1700 kg, a water fall good for 300 hp, *i.e.* about 200 kW is required. Accordingly, two 100 hp turbines each are needed for the grinders and moreover two 40 hp turbines each, one for the refiners, screeners and pumps, and one for the Hollander beaters. The paper machine again requires an 8 hp turbine or a steam boiler. He goes on, and finally he had presented a complete list of requirements for a paper mill and its different processes, including for example log cutting and knot borring of logs.

The mill naturally needed lights, and Jansson recommended especially Herr Heinrich Hirzel in Leipzig, Germany, whose gas works were cheap, easy to handle, needed little space and provided an exceptional light strength.

Sawing and debarking of wood logs. The wood logs had to be exceptionally well debarked, while otherwise the bark acids would affect the cooking device negatively. It is also surprising that the wood logs had to be split normally into two pieces, prior to grinding. Another detail of the log handling is even more surprising, namely that the log ends after sawing should be cleaned from sawdust with an axe or more advanced by a rotating device made of an old grinder.



Preparing the grinding logs. An important way to pretreat the logs for grinding was to boil them. Packaging papers were those days mostly brittle and hence quite unsuitable, while they were tearing along edges and corners of the packages. Jansson (he is referring to himself as "editor") made a number of experiments boiling wood logs in water, because steamed logs produced as well known hard and inflexible fibres in grinding. Jansson found that boiling of the logs in water at a low steam pressure would provide groundwood with properties closer to those of chemical pulps. The reason was that boiling "removes a lot of acids and incrustables that attach the wood fibres, make them hard and inflexible as well as counteracts glues and colours".

Grinding. The grindstones were those days 1.5 m in diameter and exceeding half a metre in width, and they worked with the axis horizontally or vertically. Jansson preferred the horizontally working grindstone. For the best result, 100 effective horsepowers, *i.e.* 75 kW, should be applied on each stone. Jansson recommended quite loose and large-grit grindstones that do not need sharpening so often, only 1 – 2 times a week. Such stones were provided for example by Gebrüder Israel in Dresden, Germany. He also gave good hints how to sharpen the grindstones by a sharpening ax or roll. The latter maintains the grindstone perfectly circular. With a rotational speed of 140 - 160 r/min the best pulp was obtained. This rotational speed corresponds to a grindstone surface speed of $4.5 \text{ m/r} \times 150 \text{ r/min} = 11 \text{ m/s}$. Jansson described also the grindstone sharpening in detail, although the pressure during grinding was not revealed.

Screening and Refining. Unless log heating, the groundwood produced by Jansson was quite coarse, and subsequently the coarse fibres were screened

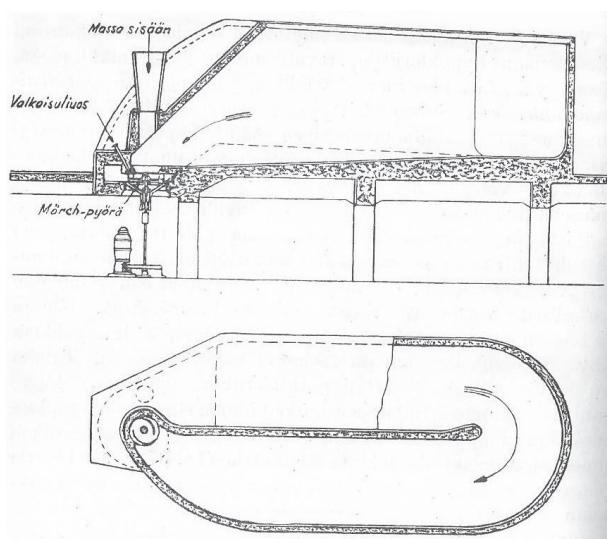
away from the accept pulp by a shaking screen and then ground in a grindstone refiner.

Beating in Hollanders. During beating, the pulp is normally glued and coloured depending on what grades the mill is producing. Kaolin or blue clay were introduced as well, in case the paper was not dyed brown, red or yellow, for which purpose yellow or brown ochre, castle brown or English red were used.

Pulp bleaching. The bleaching was performed simply by chlorine water in a washing Hollander. Acid was not recommended in bleaching, because the pulp would turn red. Two-stage bleaching was already those days a known concept. Half of the chlorine water was in such a case charged on the steamed, quite warm pulp slurry and the Hollander was run for a couple hours. The amount of chlorine water charged in the second stage was maximum half of the total chlorine charge, but could be lower dependent on the pulp brightness obtained after the first stage. The pulp had to be treated in the Hollander until desired brightness was achieved. After this the pulp was washed as normally and introduced into a fine treating Hollander.

Glue Cooking and Glueing. Dyeing. Paper Finishing. These important areas of paper making were as important as the pulping.

Board Production of Groundwood, made of pretreated wood. Carton Board of White Groundwood. Production of White Groundwood. These sections were treated in a relatively short "Second Chapter". The wood was pretreated and the



pulp produced almost as for paper. But now the log ends were not cleaned and neither there was a need to bore the branch knots, if not extremely big. The wood logs were cooked in rocket formed boilers with steam for 10 – 16 h. The grindstones were run at a revolution speed of 180 r/min. The screening was performed preferably with high-frequency (500 r/min) shakers with 6 mm diameter holes and with about 4 mm holes in the finishing screening.

After a number of processing steps the pulp was fed to the board machine, which had a formatting cylinder about 0.5 m in diameter made of iron or red beech. The formatted sheet went then to a pressing section with two iron cylinders with endless felts in between. The felts formed an almost one meter long table on both sides of the double-cylinder. The pulp sheet was put on the table and was then pressed to a moisture content of 40 - 50 %. The drying was finally finished by water steam in a system of tubes or in cylinders, and in this specific case the sheet was in between the cylinder and a metal wire until the sheet dried. For special purposes the pulp sheet was moistened and finished between back and forth rolling cylinders, which produced board of a special strength and solidity desired by book binders, brief-case and saddle makers *etc.* By impregnation with glycerine or linen oil the product could replace leather, and simultaneously it was an extremely good material for flanges in water and steam pipes.

Carton board was produced mainly in the same way as wood pulp, but the screening was performed by application of 4 mm diameter holes in the first stage, and slightly smaller in the second stage. The pulp obtained was thus finer than previously. In case the groundwood was sold in form of pulp, it was pressed to 60 – 65 % moisture content only, after which drying was completed in a drying house, where the wet, hanging sheets dried slowly at 40o C. These sheets could consequently be easily disintegrated in water for paper production.

Conclusions

Mr. Carl Johan Jansson, Eng., was a self-educated, practical engineer/technician and a great innovator. Thanks to Mr. Ingwald Sourander, Eng., his name is quite well known to Finnish paper engineers today. Sourander made a big job to clarify who C. J. Jansson was.

C. J. Jansson was technically familiar with the pulping processes and understood their significance for the paper and board grades. Funnefos mill and Jansson won first prize for the best paper quality at the World Exhibition of Philadelphia in 1876. Boiling the wood logs in water or steaming them appeared always an immediate measure for Jansson to improve paper and board grades. When he came to Nokia with stock-rooms full of second-quality grades, the wood pretreatment in combination with good screening improved the pulp and paper quality.

Apparently Jansson was invited to a mill to solve current quality problems, and he typically introduced pretreatment of the wood logs and hence increased the grindstone rotational speed and decreased the pressure force. By doing so he improved the wood "toughness" but compensated the slower wood grinding by increased grindstone surface speed. The lower pressure fortunately decreased fibre breakage, but resulted anyway in suitable fibrillation. Jansson however never explained in "scientific" terms why various measures was taken, but on the other hand, he apparently understood what should be done to provide the wood a suitable viscoelasticity and hence to have the grindstone produce the best frictional conditions. - Carl Johan Jansson is certainly worth a praise by modern engineers, theorists and paper historians!

Many thanks to those who have helped finishing this presentation. - Jan-Erik Levlin and Nordiska Pappershistoriker (Nordic Paper Historians) for the possibility to reveal this very interesting piece of papermaking history. The Paper Engineer's Association for providing the pictures of C. J. Jansson and I. Sourander. Rolf Hauge for recognition of the Funnefos Mill in Norway.

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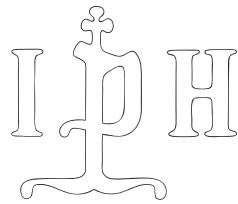
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