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HANDMADE PAPER AND ITS WATER-MARKS*

A Bibliography

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INTRODUCTION



In this bibliography I have listed only the works directly connected with the art of handmade paper and watermarks in handmade papers. No attempt has been made to catalogue the modern books treating with machinemade paper or dandy-roll watermarks. This list was commenced about six years ago and has been added to whenever a book was found dealing with the subject in any

*A letter under date of April 14, 1917, from Henry E. Surface, Chairman, *Committee on Bibliography, Technical Association of the Pulp and Paper Industry*, transmitting this bibliography to the Association members, reads as follows:

"Your Committee on Bibliography transmits herewith as its second contribution a manuscript entitled 'Handmade Paper and Its Water-Marks: A Bibliography,' by Dard Hunter, The Mill, Marlborough-on-Hudson, N. Y., Dec. 9, 1916. Mr. Hunter has very kindly consented to cooperate with the Association in its bibliographic work to the extent of permitting the use of this material in the official publications of the Association and for presentation at its Spring Meeting, May 24 and 25, 1917. Complete credit for compiling and editing the bibliography in question is due Mr. Hunter alone, as it was accomplished entirely at his personal expense and responsibility. The only action your Committee has taken in this regard has been to encourage him to put into more permanent form for public use certain material that he had been collecting over a period of years for his personal information.

"For cross-indexing purposes, mention is made that the last previous contribution of the Committee on Bibliography was 'United States Government Publications Pertaining to Pulp and Paper,' published in *Paper*, Vol. XIX, No. 4, New York, October 4, 1916."

I

Mr. Dard Hunter. 12-17-17g

way. All of the books are out-of-print and the earlier ones are exceedingly hard to procure. The later items may occasionally be had from the antiquarian book-dealers in Europe. However, even the later ones are scarce; owing to the limited demand for this kind of books the editions were very small.

There has been little written in English on the subject of watermarking, there being no complete book devoted to it from a technical standpoint. In the history of watermarking the French lead, followed closely by the Germans. The earlier books on the making of handmade paper are all more or less vague and there are but two or three that give a detailed account of the art as it was then practiced. The work on printing by Mr. Hansard (*Typographia*, London, 1825) gives the most lucid account of the process that exists in the English language. In French, De La Lande is very thorough and his work was translated into Dutch and Spanish, which formed the textbooks on papermaking at the time. The works of Schäffer, Breilkopf, Koning and others are very valuable records of old papermaking and watermarking and in the more modern works Briquet, Heitz, Hausmann, Hössle and Sotheby must not be overlooked. In our own country Joseph Willcox and H. G. Jones have done much to preserve the traditions of the first papermakers in America.

Perhaps a brief account of how I became interested in handmade papermaking would not be amiss in this introduction. Having been born in the environment of printing—my father, grandfather and great grandfather all being printers and craftsmen—I very early became interested in fine book printing and in book design. The problem of getting suitable paper was always a difficult matter and although European handmade paper could be had, it was not always made of the best of materials. I have seen through the press upwards of 200 different titles, from duodecimo to folio, printed on handmade paper from European mills. I am sure none of these books will be in existence in two hundred years. The so called handmade paper coming from Italy is extremely poor, being made from straw, rope and even woodpulp. After using the handmade papers from the foreign mills for some twelve years I became convinced that to get paper such

as I wanted it would be necessary to make it myself to be sure proper materials went into the pulp. To learn the art of papermaking by hand it was necessary to go to Europe and study the process. However, I found the continental mills hard to enter, so I went to England, where I found the task less difficult. In London I was able to get a place with one of the oldest firms in the world where moulds for forming handmade sheets are manufactured. After working in several mills and shops in England I returned to America and located on a brook of pure water, where I built a very small mill for making handmade papers. This is now the only "handmade mill" in America, and from it come the sheets on which I print my books. The capacity is about 500 sheets of paper a week. The material is new, white cotton and linen cuttings.

This bibliography was originally made as a working list for forming a library on ancient papermaking and watermarking to be used in writing; a book on these subjects which I expect to be able to have ready in two years' time. A goodly number of the books have been found, but still there is much hunting before the library will be complete. However, not over a half dozen books are listed that I have not examined carefully and it is hoped the descriptions will be found accurate.

ATKEN, P. H.

Preliminary Notes on 15th Century Watermarks. In: *Trans. Glasgow Arch. Society*, New Series, vol. 1, pp. 535-539. Glasgow, 1890.

AMES, JOSEPH

Typographical Antiquities. 598 pp., post 4to. London, 1749.

On pages 74 to 75 are engraved plates of watermarks used by Caxton and other early English printers.

AMES, JOSEPH AND W. HERBERT

Typographical Antiquities. 3 vols., 4to. London, 1785-90. Numerous reproductions of watermarks practically the same as in the earlier edition.

ASTLE, THOMAS

The Origin and Progress of Writing, with Some Account of the Origin and Development of Printing. 235 pp., 4to. London, 1784.

Four pages are devoted to the history of papyrus, Chinese paper, cotton paper and paper made from linen rags.

BADCOCK, JOHN.

The Complete Book of Trades, including a copious table of every trade, profession, occupation and calling. 495 pp., 8vo. London, 1842.

Six pages devoted to paper, with an engraving showing vatman and coucher at work at the vat.

BAGFORD, JOHN

Prepared material for a history of papermaking which was never published. Bagford was recognized in England as the highest authority on paper of the time. The items he collected are now in the British Museum, numbered 5891-5988. John Bagford died in 1716.

BARON, F.

Dictionnaire de filigranes classés en groupes alphabétiques et chronologiques. (Dictionary of watermarks classified in alphabetical and chronological groups.) 8vo. Namar, 1900.

BARONE, N.

Le filigrane delle antiche cartiere ne'documenti dell' archivio di stato in Napoli dal 13 al 14 secolo. (The watermarks from the antique paper and documents in the archives of Naples in the 13th and 14th centuries.) 8vo. Napoli, 1889.

BASKERVILLE, JOHN

Publii Virgilio Maronis Bucolica, Georgica, et Æneis. The first book to be printed on wove paper. Birmingham, 1757.

Baskerville was the inventor of wove moulds in 1750. The specimens from the press of Baskerville, the reviver of printing, are regarded as very beautiful examples of typography.

BAYLEY, HAROLD ✓

The Lost Language of Symbolism. An inquiry into the origin of certain letters, words, names, etc. 2 vols., vol. 1—375 pp., vol. 2—388 pp., med. 8 vo. London, 1912. In this work there are reproductions of 1,400 watermarks and emblems.

BAYLEY, HAROLD

Notes on Watermarks. In: *Booklovers' Magazine*, vol. 6, pp. 65-71. London, 1906.

BAYLEY, HAROLD

A New Light on the Renaissance. 8vo. London, 1909.

BEADLE, CLAYTON

The Development of Watermarking in Handmade Papers. In: *Journal of the Society of Arts*, vol. LIV, No. 2791. 8 vo. London, May 18, 1906.

Eleven pages of text and reproductions of 18 watermarks and two illustrations of wove and laid papers.

BEADLE, CLAYTON

The Clayton Beadle Collection of Watermarked Papers. In: *The Paper Makers' Monthly Journal* (London), April 15, 1908.

BLADES, WILLIAM

The Biography and Typography of William Caxton. 8vo. London and Strassburg, 1877.

Paper—its value, watermarks, papermills, paper used by Caxton, etc. Eight pages in regard to paper with reproductions of eight watermarks; one illustration of stampers.

- BLADES, WILLIAM**
Watermarks. In: *Publishers' Weekly*, No. 907. New York, 1889.
- BLADES, WILLIAM**
The Life and Typography of Caxton. 2 vols., vol. 1—51 pp., vol 2—xviii pp., 9 plates, 8vo. London, 1861-63.
- BODEMANN, E.**
Inkunabeln der königlichen öffentlichen Bibliothek zu Hannoverg. (Incunabula of the Royal Library at Hannover.) Hannover, 1866.
Contains over 200 reproductions of early watermarks.
- BÖCKLER, GEORG ANDRAE**
Theatrum Machinarum novum exhibens opera molariaet Aumatica Constructum Industria. Engraved title and 154 plates of machinery. Folio. Nürnberg, 1662.
Plate 73 shows papermaking, vatman at the vat, press, stampers, water-wheel and paper hung up to dry. Plate 74 shows the stampers that were used at the time for reducing the rags to pulp. Short description in Latin of each plate, but of little use as an explanation.
- BÖSCH, HANS**
Die Hohenzollern und die Papierfabrikation in Franken. (The Hohenzollerns and Papermaking in Franconia.) In: *Papierzeitung* (Berlin), 1897.
Ten watermarks are reproduced.
- BOFARULL Y SANS, FRANCISCO DE**
La heraldica en la filigrana del papel. (The heraldry in the watermarks of paper.) 1901.
Reproductions of thirty watermarks.
- BOUDON, G.**
Notes sur quelques filigranes de papiers des XIV et XV siècles et de la première moitié du XVI. (Notes upon some watermarks in paper of the 14th and 15th centuries and the first half of the 16th century.) Société des Antiquaires de Picardie, 1881-1889.
Reproductions of thirty-seven watermarks.
- BOYER (H.), and VALLET DE VIRIVILLE**
Filigranes de papier du 15me siècle aux armes des familles Coeur et de Bastard. (Watermarks of paper of the 15th century with the arms of the families of Coeur and Bastard.) 8vo. Paris, 1860.
- BREITKOPF, JOHANN GOTTLIEB IMMANUEL**
Versuch den Ursprung der Spielkarten, die Einführung des Linnenpapieres und der Holzschneidekunst in Europa. (Research of the origin of playing cards, the introduction of linen paper and the wood cutting art.) 2 vols., vol. 1—pp. 136, vol. 2—pp. 192, cr. 4to. Leipzig, 1784-1801.
In volume one, there is a 68-page description of linen paper and seven folded engravings of playing-cards; one folded engraving showing the interior of a Japanese paper mill with vat and beating by hand; one plate of Hindostanish paper mill with seven figures; two plates of stampers and one of watermarks, twenty in number, mostly bull heads.
Johann Gottlieb Immanuel Breitkopf was a German printer and publisher. He was a musician of some skill and it is said he

invented movable types for printing music, in 1750. He also devised a method for printing maps and charts from movable pieces. Breitkopf was a friend of Goethe and set his early poems to music. The firm for which he worked published the musical compositions of Beethoven and Mozart and many of the other famous German musicians of the time.

BRIQUET, C. M.

La légende paléographique du papier de coton. (The paleographic legend of cotton paper.) 18 pp., 12 mo.; Genève, 1884.

BRIQUET, C. M.

Recherches sur les premiers papiers employés en Occident et en Orient du Xe au XVe siècle. (Research of the first paper employed in the Occident and in the Orient from the 10th to the 14th centuries). *Mémoires de la Société Nationale des Antiquaires de France*, vol. xlvii, 77 pp. Paris, 1886.

Reproductions of twenty-one watermarks, with description.

BRIQUET, C. M.

Papiers et filigranes des archives de Gênes, 1154 à 1700. (Papers and watermarks from the archives of Genoa.) Avec 593 dessins, autographes. 130 pp., 8vo. Genève, 1888.

BRIQUET, C. M.

De l'utilité des filigranes du papier et de leur signification à propos d'un récent procès. (The utility of watermarks in paper and of their significance with regard to a recent process.) 8vo. Berne, 1888.

BRIQUET, C. M.

De la valeur des filigranes du papier comme moyen de déterminer l'âge et la provenance de documents non datés. (The value of watermarks in paper as a means of determining the origin of documents without dates.) 8vo. Genève, 1892.

BRIQUET, C. M.

Sur les papiers usités en Sicile. Extr. *Archivio storico Siciliano*, N. S., anno XVII. 1892.

Reproductions of forty-one watermarks.

BRIQUET, C. M.

Les anciennes papeteries du Duché de Bar, et quelques filigranes Barrois de la seconde moitié du XV siècle. (The ancient paper-mills of the Duchy of Bar and some watermarks of the second half of the 15th century.) Extr. du *Bibliographie moderne*. 1898.

Reproductions of eight watermarks.

BRIQUET, C. M.

Les filigranes: dictionnaire historique des marques du papier des leur apparition vers 1282 jusqu'en 1600; avec 39 figures dans le texte et 16,112 facsimilés de filigranes. (Dictionary of the Marks in Paper and their appearance from 1282 to 1600; with 39 figures in the text and reproductions of 16,112 watermarks.) 4 vols., 4to. Paris, 1907.

BRIQUET, C. M.

Les filigranes ont-ils un sens caché; une signification mystique ou symbolique? (Have watermarks a hidden meaning, mystical or symbolical?) pp. 25, 8vo. Besanc, 1910.

CAMUS

Notice d'un livre imprimé à Bamberg en 1462. (Notice of a book printed in Bamberg in 1462.) Paris, 1799.

Reproductions of three watermarks.

CANTERBURY

A Glance at the Canterbury Ecclesiastical Archives. In: *Paper*, (New York), vol. IX, No. 10, November 20th, 1912.

Two pages of text and reproductions of twenty-four watermarks.

CHURCHYARD, THOMAS ✓

In *The Progress of Queen Elisabeth*, by Nicholas, is given a poem by Churchyard entitled: A Description and Playne Discourse of Paper, and the whole Benefitts that Paper Brings, etc. The poem is about Spielman, who is supposed to have established the second paper mill in England (about 1588).

CLAUDIN, A.

Origines de l'imprimerie à Alby en Languedoc. (Origin of Printing at Alby in Languedoc.) Paris, 1880.

COHENDY, MICHAEL

Note sur la papeterie d'Auvergne ante. à 1790 et les marques de fabrique des papeteries. (Note on the paper mills of Auvergne before 1790 and the trade marks of the paper mills.) Extr. des *Mémoires de l'Académie de Clermont*. 1862.

Reproductions of forty-one watermarks.

DE LA LANDE

Art De Faire Le Papier. (Art of Making Paper.) Vol. 4 of *Description Des Arts et Metiers*. 150 pp., folio. n.p. (Paris), 1762.

This is one of the important works on handmade papermaking. There are fourteen large engravings (one folded) showing the complete process from cutting the rags to wrapping the finished paper. Vol. 4 of this book of trades contains, besides the paper-maker, the cardmaker; pasteboard; tanner; leather and parchment workers.

DE LA LANDE

Arte de hacer el papel segun se practica en Francia, y Holanda, en la China, y en el Japon. Traduc. por. Mig. Geron. Suarez y Nurez. (Art of Paper-making as practiced in France, Holland and China and also in Japan, 284 pp. 13 copper plates, 4to. Madrid, 1778.

This is the Spanish edition of the above.

DE LA LANDE

(See Kasteleijn, P. J.)

DE LA SERNA SANTANDER

De La Serna Santander catalogue des livres de sa Bibliotheque. (The catalogue of the books of the library of De La Serna Santander.) Tome v. Bruxelles au xi, 1803.

Reproductions of 147 watermarks.

DENNE, SAMUEL

Observations on Papers, in: *Archaeologia*, vol. 12, pp. 114-131, 1795.

Contains four plates of watermarks and one plate of Pott marks from 1604 to 1663.

DE PROPRIETATIBUS RERUM

Printed by Wynken de Worde (the successor of Caxton) in 1498. Folio.

This book is supposed to be the first volume printed in England on English made paper. The paper was made by John Tate, who died in 1514.

DE LA FONS MELICOQ

Noms des diverses sortes de papiers employés au moyen age dan le Nord de la France; leur prix, leurs marques, etc. (Names of the several kinds of paper employed in the north of France; their value, their marks, etc.) In: *Bulletin du Bouquinsiste de A. Aubry*, Oct. 1, 1858, pp. 482-486. Paris, 1858.

DESBARREAUX-BERNARD

Catalogue de la Bibliothèque de Toulouse, Ière partie, (Catalogue of the Library of Toulouse, 1st part.) Mon-nable, Toulouse, 1878.

DESMAREST, N.

Art de fabriquer le papier. (Art of making paper.) Des arts et métiers mecaniques de l'encyclopedie methodique. From: *Arts and mechanical trades of the methodical encyclopedia.* Vol. 5, pp. 463-595. Paris, 1788.

DEVAULX, TH.

Filigranes. Revue des arts decoratifs. (Watermarks. Review of the Decorative Arts.) Janvier, 1898.

Reproductions of twenty-eight watermarks.

DIDOT, M.

Lettre sur les découvertes de M. Didot, ainé, dans les arts de la papeterie. (Letter on the discovery of M. Didot, the elder, on the art of papermaking.) 16 pp., 12mo. Paris, 1783.

EVANS, LEWIS

The firm of John Dickinson and Company, with an account of ancient paper making. 63 pp., 4to. London, 1896.

Four pages are devoted to ancient papermaking, with twelve reproductions of watermarks and two illustrations.

FABRICIUS, JOHANN ALBERT

Io. Alberti Fabricii . . . Bibliographia Antiquaria. Ed. III, 957 pp., 4to. Hamburg, 1760.

Breitkopf says (pp. 45, vol. 1; *Versuch den Ursprung der Spielkarten*, etc., etc., 1784-1801): "Many writers on the invention of paper are named in this book."

FENN, SIR JOHN

Edition of Paston Letters. 5 vols., 4to. London, 1787-1823.

Reproductions of many watermarks may be found in this edition of the Paston Letters.

FISCHER, GOTTHELF

Versuch die Papierzeichen als Kennzeichen der Alterthumskunde anzuwenden. In: *Beschreibung Typog. Letters*, part 6. 8vo. Nürnberg, 1804.

FRAME, RICHARD

A Short Description of Pensilvania: or A Relation of what Things are known, Enjoyed and like to be Discovered in said Province. Printed by Wm. Bradford, Philadelphia, 1692.

In this volume is a 26-line poem on a paper mill in Germantown, possibly the Rittenhouse mill, established in 1690.

FRANKLIN, BENJAMIN

Description of the process to be observed in making large sheets of paper with a smooth surface in the Japanese manner. In: *American Philosophical Transactions*, vol. 3, pp. 8-10. Philadelphia, 1793.

FRY, FRANCIS

The Bible of Cloverdale, MDXXXV. Remarks on the titles, watermarks, etc., with facsimiles. 40 pp., 15 plates; 8vo. London, 1867.

Plates 9, 10, 11, 12 give reproductions of ten watermarks of the paper on which the 1535 Bible was printed.

GARNETT, RICHARD

Early Arabian Paper-making. In: *The Library*, vol. IX, 1903.

GAUTHIER, J.

L'Industrie de papier dans' les hautes vallées franco-toises du XV et XVIII siècles. (The paper industry in the high valleys of France in the XVth to the XVIIIth centuries. Extr. des *Mémoires de la Société d'Emulation Montbeliard*, 1897.

GOLLOB, ED.

Verzeichniss der griechischen Handschriften in Oesterreich ausserhalb Wiens. (Catalogue of the Grecian manuscripts in Vienna, Austria.) In: *Sitzungsberichte der kais. Akademie der Wissenschaften in Wien*, phil. hist. Clas. 1903.

Reproductions of sixty watermarks.

GUNTERMANN, FRIEDRICH

Die älteste Geschichte der Fabrikation des Linnenpapiers. (The Ancient History of the Making of Linen Paper.) In: *Serapeum*, nos. 17-18, 1845.

Reproductions of sixty-four watermarks.

HANSARD, THOMAS C.

Typographia: The Origin and Progress of Printing. 939 pp., plates and ills., cr. 8vo. London, 1825.

Paper—Invention of—Papyrus—Cotton—Linen—Making by Hand, pages 202-236. The account of the making of paper by

hand given by Hansard is perhaps the most intelligent of any articles to be found in English on this subject.

HASSELQUIST, ALEXIS

Vattermärken i. Hangjandt papper. Allmänna svenska bocktryckareföreningens meddelanden, H. 207. 1905.
Reproductions of forty-four watermarks.

HASSELT, G. VAN

A prospectus for a work on old paper and paper marks. (In French.) Arnheim: J. H. Macleuran, 1811.

Hasselt was born in 1751 and died in 1825. The work outlined in the prospectus was never published, although a great deal of material had been collected to make the book very complete. A copy of the prospectus and an English translation in the handwriting of Mr. Van Hasselt were exhibited at the Caxton celebration in London in 1877. A collection of watermarks formed by Mr. Van Hasselt is catalogued elsewhere in this bibliography.

HASSELT, G. VAN

His collection of watermarks consists of 482 specimens of old paper from the year 1339 to 1600, being blank leaves cut off from original and dated records in the Gelderland Archives, all having different watermarks. In three volumes, viz.: Vol. 1—1339-1399, 94 specimens. Vol. 2—1400-1409, 219 specimens. Vol. 3—1500-1600, 169 specimens. (The above is a private collection now owned in England. It was formed by G. Van Hasselt, who is mentioned elsewhere in this bibliography.)

HASSLER

Vertrag über die älteste Geschichte der Fabrikation des Linnenpapiers. (Upon the ancient history of the manufacture of linen paper.) *Verhandlungen des Vereins für Kunst und Allerthum in Ulm und Oberschwaben.* Ulm, 1844.

Reproductions of eight watermarks.

HAUSMANN, BERNHARD

Albrecht Dürer's Kupferstiche, Radirungen, Holzschnitte und Zeichnungen, unter besonderer Berücksichtigung der dazu verwandten Papiere und deren Wasserzeichen. (The watermarks to be found in the papers which were used for the copper-plates, etchings, wood-cuts, and drawings of Albrecht Dürer.) 130 pp., 4to. Hannover, 1861.

Reproductions of fifty-seven watermarks.

HEITZ, PAUL

Les filigranes des papiers contenus dans les archives de la ville de Strasbourg. (Watermarks in the papers contained in the Archives of Strasbourg.) 4to. Strasbourg, 1902.

HEITZ, PAUL

Les filigranes des papiers contenus dans les incunables Strasbourgeois de la Bibliothèque Imperiale de Strasbourg. (Watermarks of papers contained in the Strasbourg incunabula of the Imperial Library of Strasbourg.) 4to. Strasbourg, 1903.

HEITZ, PAUL

Les filigranes avec la crose de Bâle. (Watermarks with the crozier of Basle.) 4to. Strasbourg, 1904.

HERRING, RICHARD

Paper and Paper-making, Ancient and Modern. 120 pp., 8vo. London, 1856.

Reproductions of five old watermarks and thirteen pages devoted to watermarking with several specimens of light-and-shade marks.

HOLME, JOHN

A True Relation of the Flourishing State of Pensilvania. 1696.

Contains a poem on the Rittenhouse Mill, but it was not published until 1847, when it appeared in *Bulletin Hist. Society of Penna.*, vol. i, no. 13, p. 72.

HINDLEY, CHARLES

The Old Book Collectors' Miscellany: or a collection of readable reprints of literary rareties. 4 vols., 8 vo. London, 1873.

In vol. 4 are given reproductions of two watermarks from a 15th century romance (reprinted, 80 copies, London, 1820) of which there is no identity. One of the marks is a pair-of-shears and the other a bull's head with cross.

HODGSON, B. H.

On the native method of making the paper, denominated in Hindustan, Nipalese. In: *Journal of the Asiatic Society of Bengal*, vol. 1, pp. 8-11. Calcutta, 1832.

HOERNLE, A. F. RUDOLPH

Who was the inventor of rag paper? From: *Journal Royal Asiatic Society*, pp. 663-684, 1903.

HOESSLE, FRIEDRICH VON

Geschichte der alten Papiermühlen im ehemaligen Stift Kempten und in der Reichsstadt Kempten. (History of old paper mills in old Kempton monastery and in the Royal city of Kempten.) 109 pp., 4to. Kempten, 1900.

Frontispiece and reproductions of 157 watermarks, thirty-seven text illustrations, three charts and three colored plates of interiors of old mills.

HOESSLE, FRIEDRICH VON

Die Alten Papiermühlen der Freien Reichsstadt Augsburg sowie alte Papiere und deren Wasserzeichen im Stadt-Archiv und der Kreis und Stadt Bibliothek. (The old paper-mills of the Royal city of Augsburg, also the old paper and watermarks in the City Library of Augsburg.) 38 pp., 4to. Augsburg, 1907.

Reproductions of 258 watermarks.

HOESSLE, FRIEDRICH VON

Die Ulmer Papiermühle. (The Ulmer paper-mill.) In: *Papier-zeitung*, H. 102. Berlin, 1906.

Reproductions of eight watermarks.

HUNTER, DARD

Ancient Paper Making. From: *The Miscellany*, vol. 2, no. 4, 8vo. Kansas City, Missouri, December, 1915.

Six pages of text and reproduction of two watermarks and two illustrations.

HUNTER, DARD

Paper for Artistic Printing: Material of Individual Character for Reproducing Engravings and Etchings.

In: *Scientific American Supplement*, vol. LXXXII, no. 2119. New York, 1916.

HUNTER, JOSEPH

Some specimens of marks used by the early manufacturers of paper, as exhibited in documents in the public archives of England. In: *Archaeologia*, pp. 447-254, vol. 37, 4to. London, 1858.

INTERNATIONAL BIBLIOGRAPHICAL INSTITUTION (Brussels.)

Comment il faut classer et cataloguer les filigranes. (How to classify and catalogue watermarks.) Brussels: International Bibliographical Institution, 1912.

JACOBS, DR.

Geschichtsquellen der Provinz Sachsen. Bd. XV bearb. von Dr. Jacobs. (History of the Province of Saxony.) 1883.

Two illustrations.
Reproductions of four watermarks.

JANSEN, HENDRIC J.

Essai sur l'origine de la gravure en bois et en tailedouce et sur la connoissance des estampes des xv et xvi siècles . . . Suivi de recherches sur l'origine du papier de coton et de lin; sur la Calligraphie et sur les filigranes des papiers des xiv, xv et xvi siècles. (Essay on the origin of prints on wood and copper-plates and upon the knowledge of engraving of the 15th and 16th centuries; also researches on the origin of cotton and linen paper, on the Calligraphy and the watermarks of the paper of the 14th, 15th and 16th centuries.) 2 vols., 8vo. Paris, 1808.

JOHNSON, J.

Typographia, or the Printers' Instructor, including an account of the Origin of Printing. 2 vols., sm. 18 mo. London, 1824.

Historical account of paper, p. 4, vol. 1.
Notice of an ancient paper mill, p. 1, vol. 2.

JONES, HORATIO GATES

Historical Sketch of the Rittenhouse Paper Mill, the first erected in America, A.D. 1690. In: *The Penna. Magazine of History and Biography*, vol. XX, No. 3, royal 8vo. Philadelphia, 1896.

Reproduction of the Rittenhouse watermark and 19 pp. text.

JOURNAL ZUR KUNSTGESCHICHTE UND ZUR ALLGEMEINER LITERATUR. (Journal of the History of Art and Literature.) Heft v and xiii. Nuremberg, 1776.

KASTELEIJN, P. J.

Volledige Beschrijving van alle Konsten, Ambachten, Handwerken, Fabrieken, Trafieken, Derzelve, Werkhuizen, Gereedschappen, enz. (The art of paper-making.) 288 pp., 8 vo. Dordrecht, 1792.

This is the Dutch edition of De La Lande. It contains fourteen folded copper plates showing the complete process of paper-making. The plates are practically the same as in the first French edition (1762), the only change being in the costumes of the workers.

KEINZ, FRIEDRICH

Ueber die älteren Wasserzeichen des Papiers und ihre Untersuchung. (About the old watermarks of papers and their examination.) From: *Zeitschrift für Bücherfreunde*, 1897.

Reproductions of eleven watermarks.

KEINZ, FRIEDRICH

The Earliest Watermarks. In: *Literary Collector*, vol. 8 no. 6, 8vo. Greenwich, Connecticut. October, 1914.

One plate with reproductions of eleven watermarks and 8 pp. of text.

KIRCHNER, ERNST

Die Papiere des XIV Jahrhunderts im Stadtarchive zu Frankfurt a M. und deren Wasserzeichen technisch untersucht und Beschrieben von Ernst Kirchner. (The paper of the 14th century in the city archives at Frankfurt a M. and their watermarks.) Mit 153 Abbildungen von Wasserzeichen. 35 pp., 4to. Frankfurt a M., 1893.

KONING, JACOBUS

Verhandeling over den Oorsprong, de Uitvinding, Verbetering en Volmaking der Boekdrukkunst. 8vo., pp. 475. Haarlem, 1816.

Reproduction of twenty-three watermarks. This is a Dutch book on Typography.

KONING, JACOBUS

Bijdragen tot de geschiedenis der Boekdrukkunst. 139 pp., 1 plate, 8vo. Haarlem, 1818.

An early 19th century Dutch book on the art of printing. Ten watermarks are reproduced. Koning was the first to write in regard to the origin of some of the early watermarks.

KONING, JACOBUS

Dissertation sur l'origine, l'invention et le perfectionnement de l'imprimerie. Par Jacques Koning... Couronnée par la Société hollandoise des sciences à Harlem au mois de mai 1816. Tr. du hollandois. viii p., 21., 180 p. vii fold. pl. 22cm. Amsterdam, S. Delachaux, 1819.

KOOPS, MATTHIAS

Historical account of the substances which have been used to describe events and to convey ideas, from the earliest date to the invention of paper. Printed on the first useful paper manufactured solely from straw. 1st. ed., 8vo. London, 1800.

KOOPS, MATTHIAS

Same. 2d. ed., 273 pp., 1 plate of papyrus, 8vo. London, 1801.

Appendix (15 pp.) printed "on paper made from wood alone."

LA LANDE

(See De La Lande.)

LEMOINE, HENRY

Origin and History of Printing with a curious dissertation on the Origin and use of Paper. 156 pp., 8vo. London, 1797.

Three pages devoted to an inquiry into the origin and invention of paper.

LEMOINE, HENRY

Same. 2d. ed., 141 pp., sq. 8vo. London, 1813.

LEMON, R.

Facsimiles of watermarks from the collection formed by the late R. Lemon, of the State Record Office with illustrations from the earliest examples. In: H. T. Scott and S. Davey, *A Guide to the Collection of Historical Documents*. 8vo. London, 1891.

LE NORMAND, L. Séb.

Manuel du fabricant de papier, ou de l'art du fabricant de carton, et de l'art du formaire. (Manual of the making of paper and paste-board.) 2 vols. and atlas, vol. 1—330 pp., vol. 2—308 pp. Paris, 1833.

Atlas contains seventeen large folded plates showing stampers, beaters, mill interiors, etc.

LICHACEV, H. T.

Paleograficeskve znacenie bumaznych wodjanych znakov. (Palaeographical importance of watermarks.) 4 vols. and atlas, 4to. and folio. St. Petersburg, 1899.

LISINI, A.

I segni delle cartiere di colle di A. Lisini. Extr. *Miscellanea storica della Valdelsa*, 1897.

Reproductions of twenty-eight watermarks.

LOVE

Love Ballads of the XVth century. 120 pp., 8vo. East Aurora, N. Y., 1897.

Reproductions of forty old watermarks, used as ornaments only.

LUIKEN, JAN EN KASPER

Spiegel van het Menselyk Bedryf, vertoonende honderd verscheiden Ambachten, Konstig afgebeeld, en met Godlyke Spreuken en Stichtlyke Verzen verrykt. Small 8vo. Amsterdam, 1718.

An early Dutch book of trades. There are one hundred copper plates, one of which represents the Paper Maker. This book was founded on the work of Abraham St. Clara of 1717. The only difference in the two plates of the Paper Maker is that in the later edition the picture is reversed, which shows it had been traced from the copperplate of 1717.

MANZONI, G.

Annali tipografici torinesi del secolo xv. *Miscellanea di Storia Italiana*. Tomo iv. Turin, 1863.

Reproductions of thirty-three watermarks.

MARABINI, EDMUND

Die Papiermühlen im ehemaligen Burggrafenthum Nürnberg. (The Paper-mills in the old city of Nürnberg.) 176 pp., 8vo. München, 1896.

Reproductions of seventy-four watermarks, eight illustrations of old mills, etc.

MARABINI, EDMUND

Die Wasserzeichen in Büttenpapieren des 14-19 Jahrhunderts. (The watermarks in paper of the 14th to the 19th centuries.) Alterthumsverein, München, 1889.

Reproductions of thirty-four watermarks.

MARLET, L.

Les filigranes du papier. (The watermarks in paper.)
In: *Magasin pittoresque*, 31 Janvier, 1885.

MIDOUX, ETIENNE AND MATTON, AUGUSTE

Etude sur les filigranes des papier employés en France
aux 14e et 15e siècles. (Study of the watermarks of the
paper employed in France in the 14th and 15th centuries.)
8vo. Paris, 1868.

Reproductions of 600 watermarks.

MOSCHKAU, ALFRED

Die Wasserzeichen auf den seit 1818 bis date emittirten
Briefmarken und Couverts nebst Abriss einer Geschichte
der Briefmarken und des Briefmarkensammelwesens.
(The watermarks from 1818 until now in postage stamps,
and envelopes with a history of postage stamps.) 8vo.
Dresden, 1871.

MOSCHKAU, ALFRED

Die Wasserzeichen auf Briefmarken, Couverts, Postkar-
ten, etc. (The watermarks in postage stamps, envelopes,
post cards, etc.) 8vo. Leipzig, 1880.

MOUTAILLER, G.

Memento des filigranes ou marques de papiers des 13e, 14e
et 15e siècles. Memorandum of the watermarks or marks
of paper in the 13th to the 15th centuries.) 1906.

Reproductions of many old watermarks.

MUNSELL, JOEL

A Chronology of Paper and Paper Making. 226 pp., 1
plate, 8vo. Albany, 1870.

MURRAY, JOHN

Observations on the Bad Composition of Modern Paper.
24 pp., 8vo. London, 1824.

MURRAY, JOHN

Practical Remarks on Modern paper—with an intro-
ductory account of its former substitutes. 119 pp., 8vo.
London, 1829.

Murray was a famous English chemist and wrote this volume
as a plea to the papermakers to stop the use of bleach.

ONFROY, HENRI

L'Art du Papier^{le} le Papier d'Art. (The art of paper-
making.) 64 pp., 8vo. Paris, 1906.

ONFROY, HENRI

Histoire des Papeteries à la Cuve d'Arches et d'Arch-
ettes, 1492-1911. (History of papermaking at the vat of
Arches and Archettes, 1492-1911.) 52 pp., 16 illus-
trations, 4to. Evreux, 1912.

PANCIROLLUS, G.

Rezum memorabilium et deperditarum pars prima et
secunda. 4to. Frankfort: G. Schonwether, 1660.

The second part of this book deals in a small way with the art
of papermaking.

PAPIER (HET).

Hand-colored Dutch lithograph showing paper-making by

hand (about 1820). Surrounding the main picture are fifteen small illustrations showing the use of paper. (This picture is reproduced in Davis, (C. T.) *The Manufacture of Paper*, pp. 608, ills. 180, 8vo. Philadelphia, 1886.)

PARKINSON, RICHARD

A Treatise on Paper. 83 pp., 26 specimens of papers, 8vo. London, 1886.

Pages 39-46 on Handmade Paper vs. Machinemade Paper.

PERRIN, ANDRE

Les Caproni, fabricants de papier à la Serraz au XVII et XVIII siècles; leur marques et filigranes. (The Caproni manufactory of paper, Serraz, in the 17th and 18th centuries, and their watermarks.) 1892.

Reproductions of 124 watermarks.

PIEKOSINKI, FR.

Wybor znaków wodnych z XV stulecia. Estr. *Wiadomości numizmatyczno-archologiczne.* 1896.

Reproductions of 1,119 watermarks.

PIEKOSINSKI, T.

Sredniowieczne znaki wodne zebrane zrekopisow. *Wiek 14.* 4to. Cracow, 1893.

PROTEAUX, A.

Practical Guide for the Manufacture of Paper and Boards. Trans. from French by Horatio Paine, A. B., M. D. 8vo., 286 pp., 6 folding plates. Philadelphia, Pa., 1866.

Two of the plates are devoted to the making of handmade paper. One shows vats, etc., the other different kinds of watermarks in handmade paper. An excellent description of mould making is given in Chapter IV.

QUELLEN ZUR GESCHICHTE SIEBENBURGEN'S AUS SACHSISCHEN ARCHIVEN. (Source of the History of Siebenburg from the Archives of Saxony.) Ier Band Rechnungen aus dem Archiv der Stadt Hermannstadt und der sächsischen Nation, Ier Band. Hermannstadt, 1880.

RAUTER, A.

Ueber die Wasserzeichen der ältesten Linnenpapiere in Schlesien. (About the watermarks of the oldest Linen Papers in Schlesien.) *Sechster Bericht des Vereins für das Museum Schleisischer Alterthümer*, Breslau, 1866.

Reproductions of 173 watermarks.

RAUWENHOFF, N. W. P.

Papierbereiding. (Paper-making.) 30 pp., 6 figures, 8vo. Amsterdam, 1854.

Two illustrations of ancient stampers and one showing the vat which is used in the making of handmade papers.

REPORT

Arts Report of the Committee of the Society of Arts, etc. Relative to the Mode of Preventing the Forgery of Bank Notes. 72 pp., 3 illustrations, large 8vo. London, 1819.

One page is devoted to bank-note paper and watermarking.

RICHARD, J. M.

Filigranes de papiers de la première moitié du XIV

siècle, conservés au Trésor des Chartes d'Artois à Arras. (Watermarks of papers of the first half of the 14th century preserved at the treasury of the charters of Artois at Arras.) In: *Bulletin Archéologique du comité des travaux historiques*. 1888.

Reproductions of fifty-four watermarks.

RINGWALD, J. LUTHER

American Encyclopaedia of Printing. 512 pp., Cr. 8vo. Philadelphia, 1871.

Reproductions of eighteen old watermarks (pressed in paper) with description of watermarking on page 490.

SACHSE, JULIUS FRIEDRICH

Die Papier Mühle der Bruderschaft zu Ephrata. (The Paper Mill of the Brotherhood of Ephrata.) In: Lancaster County Historical Society Publication, Small 4to. Lancaster, Pennsylvania, 1897.

A description of this early American paper mill giving reproductions of the watermarks used by the Ephrata Brotherhood. This mill was established about 1741 and is supposed to be the fourth mill to be started in Pennsylvania.

SARDINI, G.

Esame sui principj della francese ed italiana tipografia. Lucca, 1796-98, 3 v. in. 1.

SCHWARZ, CHRISTIANI GOTTLIEB

Explication des filigranes qu'on trouve dans les papiers des premiers livres imprimés à Mayence. (Explanation of the watermarks that are found in the paper of the first books printed at Mayence.) Tiré des Opuscula quaedam academica varii argumenti. Nüremburg, 1793.

SERNA, DE LA

Eclaircissement sur les marques du papier des éditions du XV siècle. 2e. deel, bl. 340-392. (Upon the marks in paper (watermarks) of the editions of the 15th century.)

SCHAEFFER, JACOB CHRISTIAN

Jacob Christian Schäffer's Doctors der Gettesgelarkeit und Weltweisheit, etc., etc., sämtliche Papierversuche. (Complete experiments in paper.) 6 vols., 8vo. Regensburg, 1772.

The following are the different specimens of paper to be found in the six volumes:

Vol. I. 15th January, 1765. 55 pp., four plates of vegetation. Paper made from Poplar down; wasps' nests; sawdust; pine-chips; beechwood; willow-wood; willow-wood without rags; tree-moss; poplar; hop-tendrils; hop-wood; grape-vine—outer bark; grape-vine—inner bark and wood; fragments of nine of these papers together.

Vol. II. 30th March, 1765. 28 pp., 3 illustrations. Paper made from hemp; mulberry; mulberry—innerbark; aloe leaves; clematis wood; stinging nettle; willow; bull-rush; earth moss; barley; leaves of trees—wintered; cabbage stalks; scraps of the colored specimens; same of uncolored; roof paper made from tow.

Vol. III. 3d November, 1765. 32 pp. Paper made from Cyprian asbestos; seed-down; thistle-stalks; burdock-stalks; leaves of the lily-of-the-valley; seed-down of the thistle; water-moss; Bavarian turf; Hanoverian turf; poplar down thread—knit—woven in colors, plain and printed.

Vol. IV. 1st January, 1766. 24 pp., one plate. Paper from silk plant; mallow; orache; spruce fir wood; Artemisia wood; Indian corn; young grape vines; mixed scraps from the different papers of this volume; lace from aloe fiber.

Vol. V. 13th April, 1767. 22 pp., one plate of the hand beater as used by Schaeffer in making the specimens. Paper from genista; pine cones; potatoes—both skins and insides; shingles; mixed scraps of all specimens in this volume.

Vol. 6. 1771. Paper from reed; bean leaves; horse-chestnut leaves; tulip leaves; linden leaves; walnut leaves; genista; yellow wood; Brazil wood; mixed scraps of the nine kinds in the volume.

Schaeffer's work is without doubt the most interesting work that has ever appeared on the subject of papermaking. Dr. Schaeffer was born in Querfurt in 1718, but moved to Regensburg, where he became a clergyman. He was a naturalist of note and his work on the Fungi of Bavaria is regarded as a standard authority. His work on paper is in six volumes, foolscap 8vo., but the books are little more than pamphlets. The six volumes have but 174 pages of text. Each volume appeared at a different time and when the last one was finished the first volumes were exhausted, so it is rare to find the six volumes collected together. Dr. Schaeffer's experiments were largely made in his own house, with the help of his children. However, when he found a very difficult material to reduce to pulp he would take it to a neighboring mill. His specimens appear to have been made on a small mould with a crest watermark which is hardly visible in most of the sheets. The stamping machine he employed in making the specimens was a small roll with cams that lifted the stampers and let them fall on the material to be reduced. This machine was turned by a crank, according to the plates in the book. The author of this most interesting work states that he had no intention of making finished paper, but to simply show what materials could be used for making paper. Therefore, some of the specimens are very crude and look as if they had been made from "half-stuff." The frontispiece of volume one shows the whole art of papermaking, with little cupids performing the different operations of the work. This engraving is extremely ornamental and fanciful, the work being done with a Louis XVI beater and much drapery and splendor. Some of the samples of paper are painted upon to show that they could be used for this purpose. This book (six volumes) is the rarest work on the subject of papermaking and it is very hard to locate a complete set. Usually the volumes must be collected separately and it is often the case that the specimens are missing. A complete set is worth from one hundred and fifty dollars to three hundred dollars.

SCHAEFFER, JACOB CHRISTIAN

Proefnemingen en monster-bladen, om papier te maaken. (On the making of Paper.) 32 pp., 1 colored plate, pott 4to. Amsterdam, 1770.

SCHAEFFER, JACOB CHRISTIAN

Erweis in Musterbögen dass die neuen Papierarten von Pappelwolle Baumblättern, Hanfagen, u. s. w. sich allerdings auch zu Tapeten übermahlen u. gebrauchen lassen. (Samples of a new kind of paper brought forth to show that it is possible to use the same for the painting of tapestry.) Ten samples of painted papers, folio. Regensburg, 1772.

SCHIFFMANN, F. J.

Die Wasserzeichen der datirten Münsterer-drucke als Zeugen für die Aechtheit eines undatirten. In: *Jahrbuch f. schweizerische Geschichte*, Bd. 7. 1882.
Reproductions of nine watermarks.

SCHMIDT, CH. G. A.

Mémoire sur les filigranes des papiers employés à Stras-

bourg de 1343 à 1525. (Memorandum on the watermarks of paper used in Strasbourg from 1343 to 1525.) In: *Bulletin de la Société Industrielle de Mulhouse*. 8vo. Mulhouse, November, 1877.

SCHOPPERUS, HARTMANNUS

De Omnibus Illiberalibus Sive Mechanicis Artibus Humani Ingenii sagacitate atque industria...succinctus liber, etc. Ad finem: Impressum Francofvrti ad M., apud Georgium Coruinum, impensis Sigismundi Feyerabent. 1574.

This work contains 132 woodcuts by Jost Amman showing the different trades of the time; each illustration has a verse or so under explaining the picture. The one of the papermaker shows a man at the vat, stampers, press, water-wheel, etc. A poem under the illustration is said to have been written by Hans Sachs, the cobbler of Nüremberg.

SECHER, V. A.

Fortegnelse over 235 Prover paa skiv papirsorter brugte af den Danske Admenistration fra den 15 til det 19 aarhundrede. 1888.

Reproductions of ten watermarks.

SELLERS, GEORGE ESCOL

About Nathan Sellers, the early American Paper Mould Maker. In: *American Machinist*, August 7, 1886.

SOTHEBY, S. L.

The Typography of the 15th Century; being specimens of the productions of the early continental printers, exemplified in a collection of facsimiles from 100 works, together with their watermarks. Folio. London, 1845.

SOTHEBY, S. L.

Principia Typographica. The block books issued in Holland, Flanders and Germany during the 15th century, considered in connection with the origin of printing; to which is added an attempt to elucidate the character of the papermarks of the period. 3 vols, folio. London, 1858.

ST. CLARA, ABRAHAM

Iets Voor Allen, Zynde een Verhandeling en Verbeelding van Allerhande, Standen, Studien, Konsten, Wetenschappen, Handwerken. (Dutch book of Trades.) 467 pp., pott 8vo. Amsterdam, 1717.

The plates in this book of trades are very well executed, considering the low standard to which engraving had fallen at this time. Papermaking is described on five pages, with one illustration showing the vatman at work at the vat, also water-wheels, press and paper drying.

STOPPELAAR, J. H. DE

Het Papier, In De Nederlanden Gedurende de Middeleeuwen, Inzonderheid in Zeeland. (The paper of the Low Lands during the Middle Ages, especially Zeeland.) 124 pp., 16 folding plates with reproductions of 259 watermarks, 8vo. Middelburg, 1869.

STROMER, ULMAN

It is on record that a book was started by this author on papermaking in Nürnberg in 1360. The compiler of this bibliography can find no trace of this work. Stromer set up the first paper mill in Germany in 1390, and it is said he was the first to make paper from linen rags, in Europe. He was born in 1328 and died 1407.

SZOENYI, J. L.

14 századbeli papiros-okleveleink vizjegye. 1908.

About watermarks in paper of the 14th century, with reproductions of 223 marks.

THOMAS, GABRIEL

An Historical and Geographical Account of the Province and Country of Pensilvania. London, 1698.

In this book Thomas says: "All sorts of very Good Paper are made in German-Town, as also very fine German Linen such as no Person of Quality need be asham'd to wear."

TATE, JOHN

John Tate, the First Paper Maker of England, 1470. In: *The Cornhill Magazine* (London), November, 1861.

THOMAS, ISAIAH

The History of Printing in America with a Biography of Printers and an account of Newspapers. 2 vols., 8vo. Worcester, 1810.

Paper—made of silk and cotton, pp. 34, 76; Papermaking in Japan, p. 34; Egypt, p. 36; European, p. 38; invention of linen, p. 40; ancient in America, p. 211; paper mills, first in America, p. 213; vol. 11, pp. 95 and 529.

THOYTS, E. E.

Watermarks in Paper. In: *The Antiquary*, December, 1895.

TIMPERLEY, C. H.

A Dictionary of Printing and Printers, with the Progress of Literature, Ancient and Modern. 996 pp. ills., Cr. 8vo. London, 1839.

Reproductions of five watermarks with some account of early mills, etc.

TRADES

A General Description of All Trades. 227 pp., sm. 8vo. London, 1747.

A description of papermaking on pp. 158-159, giving scale of wages, also about apprentices, etc.

TRADES

The Book of Trades. 137 pp., 16 mo. n. p., n. d. (about 1820 and possibly American edition).

There are seven pages of text on paper-making with a very poor engraving of vatman at work. These small "Books of Trades" were very much in evidence during the 18th and early 19th centuries.

TRADES

Little Jack of All Trades, or Mechanical Arts Described. 12mo. n. p., 1829.

A juvenile chap-book giving a brief description of the arts of papermaking, printing and bookbinding.

TRADES

The Sister Arts, or a concise and interesting view of the Nature and History of Paper-making, Printing and Book-binding. 104 pp., 3 engs., 16mo. London, 1809.

There are nineteen pages on papermaking, with an engraving

showing vatman, coucher, and two folders. All the engravings are poorly executed, especially the papermaking plate.

TRADES

The Book of English Trades and Library of Useful Arts. 384 pp., 8vo. London, 1827.

Seven pages on papermaking, with woodcut of vatman at work.

URBANI, D.

Segni di Cartière Antiche. Venezia, 1870.

Reproductions of over 150 watermarks.

VAN HASSELT

(See Hasselt.)

VIRIVILLE, VALLET DE

Notes pour servir à l'histoire du papier. (Notes to serve in the history of paper.) In: *La Gazette des Beaux Arts*, 15 Mai, 1 Aout, 1 Novembre, 1859.

Reproductions of ninety-one watermarks.

VON MEERMANN, GERARDUS¹

Meermanni et doctorum Virorum ad eundem episotlae atque observationes de Chartae vulgaris Sen Linene origine. (On the origin of linen paper.) 260 pp., 8vo. Published by de Vaassen, Hague, 1762.

Meerman offered a prize of 25 ducats to the discoverer of the time linen paper was first made.

3—1500-1600, 169 specimens. (The above is a private collection now owned in England. It was formed by G. Van Hasselt, who is mentioned elsewhere in this bibliography.)

WATERMARKS

Watermarks in History and Romance. In: *Paper*, (New York), vol. VII, No. 4, April 10th, 1902.

WEHRS, GEORG F.

Von Papier, den vor der Erfindung desselben üblich gewesenenen Schreibmassen, und sonstigen Schreimaterialien. 728 pp. Halle, J. J. Gebauer, 1789.

WEIGEL, THEODOR O.

Collectio Weigeliana: die Anfänge der Druckerkunst in Bild und Schrift: an deren frühesten Erzeugnissen in der Weigel'schen Sammlung erläutert von T. O. Weigel und Dr. Ad. Zestermann. 2 vols., folio. Leipzig, 1866.

Many woodcuts of watermarks. This work in German is very much on the order of Sotheby's *Principia Typographica* (London, 1858), but executed with infinitely more critical sagacity and learning.

WHITE, F. ASHFORD

A Contribution to the Study of Watermarks; Suggestions for a System of Identification and Classification. In: *Paper*, (New York), Vol. XIV, No. 19, July 22, 1914.

WIBIRAL, F.

L'Iconographie d'Antone Van Dyck, d'après les recherches de H. Weber. (The Iconography of Antonio Van Dyck, after the researches of H. Weber.) (Leipzig, 1877.

WIENER, L.

Etude sur les Filigranes des papiers Lorrains. (Study on the watermarks of papers of Lorraine.) 8vo. Nancy.

WILLCOX, JOSEPH

Ivy Mills—1729-1866. *Willcox and Allied Families*. 139 pp., 1g. 8vo. Baltimore, 1911.

Privately printed. The author of this book is the great grandson of the Willcox who established the third paper mill in America. On page 30 is given a reproduction of the Dove watermark used by this early papermaker, Thomas Willcox.

ZONGHI, AURELIO

Le marche principali delle carte fabrianesi dal 1293 al 1599. (The principal papermarks from the paper of 1293 to 1599.) Fabriano, 1881.

ZONGHI, AURELIO

Le antiche carte fabrianesi alle Esposizione generale Italiana di Torino. Fano, 1884.

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