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Intaglio printing

A chronology concerning the provenance, the qualities, the colours and the formats of papers used up to 1850

This chronology was compiled to get an idea of the kind of paper used for intaglio printing up until 1850. This investigation shows that early plateprinters selected paper which suited their needs from whatever was available on the market. In actual practice a broad range of papers may be encountered when studying older prints. It was only in the last quarter of the 18th century that papermakers were able to manufacture paper for special purposes, such as the printing of etchings and engravings.

Die vorliegende Chronologie wurde zusammengestellt, um eine Vorstellung von den bis 1850 für den Tiefdruck verwendeten Papierarten zu erhalten. Diese Untersuchung zeigt, daß frühe Drucker das ihren Bedürfnissen entsprechende Papier danach auswählten, was auf dem Markt erhältlich war. In Wirklichkeit kann man eine große Vielfalt an Papieren antreffen, wenn man alte Drucke studiert. Erst im letzten Viertel des 18. Jahrhunderts waren Papiermacher in der Lage, Papier für besondere Verwendungszwecke, wie das Drucken von Kupferstichen und Radierungen, herzustellen.

No overall view on the historical use of paper in intaglio printing has yet been published. This chronology of data aims to be a step in this direction. The list comprises a selection on the subject of paper from my research on the history of the technique of intaglio printing, for which I study actual prints, as well as historical tools, machines, texts and images – all referred to as "sources" here –, as well as modern literature.

Due to current and thus incomplete research, the data in this chronology come mainly from Middle and Western European sources. This may give a distorted view because it offers little information on what is going on elsewhere before 1850. Nevertheless, important developments concerning the manufacture of paper occur in England and France during the second half of the 18th century and the first quarter of the 19th century, on which subject there is sufficient information available.

1 One of the Victories of Emperor Charles V (Holl. 217), engraved by Dirck Volckertszoon Coornhert after Maarten van Heemskerck, published by Hieronymus Cock, Antwerpen 1555. Engraving, printed on blue paper and heightened with white (see: 1555, Antwerp). Photocourtesy Rijksmuseum Amsterdam.

Survey of developments up to 1850

Intaglio printing starts in Germany around 1430 and somewhat later in Italy. The first engravings are printed by hand rubbing the back of the paper with a small, hard object. From 1460-1465 onwards there are indications that a roller press is used in the Upper Rhine area and from 1470 in Northern Italy. There are practically no indications available to what paper is preferred for intaglio printing before 1500, but it seems that any kind of paper then available is used for this purpose. Thereafter, in general, Albrecht Dürer and Lucas van Leyden prefer papers for intaglio printing that tend to be somewhat thinner and suppler than their woodcut papers (1500-1530 ca., Germany, Northern Netherlands). The first contemporary reference to intaglio printing paper is by the French engraver Abraham Bosse (1645, France).

Historical authors limit themselves mainly to mentioning the provenance of certain types of paper suitable for the printing of etchings and engravings, without describing their properties. Apparently provenance is equal to a certain quality. French paper in particular is popular in Middle and Western Europe from the 17th century onwards (1628, Northern Netherlands; earliest reference: 1674, Northern Netherlands). Italian paper would probably do equally well, however, the trade routes are too long rendering this paper too costly to be used in large quantities. For the same reason Dutch and German paper is not used in Italy and Italian papermills produce enough paper to supply the local market. In workshop practice Italian printers use Italian paper, as Spanish printers do (1500-1700, Italy; 1587, Spain). Although there are earlier attempts, the papermaking industry takes off in the Northern Netherlands in the 17th century with the manufacture of a good quality paper by the end of the century (earliest reference: 1761, Germany).

In the second half of the 18th century authors begin to describe the qualities of the paper needed by the intaglio printer (earliest reference: 1757, France). A general predilection becomes apparent for paper which is strong, white and lightly sized, with a fine structure and a smooth surface (although in practice one may encounter anything). Krünitz says that

rags for intaglio paper should rot first (something the papermakers in the Auvergne do, but not the Dutch) as a result of which the paper renders the lines and tones of the print better. That is why, according to Krünitz, the best intaglio paper comes from the Auvergne. In Holland paper production centers on writing paper, which is exported, while intaglio paper is imported (1807, Germany).

Wove paper is made in England since 1754. In first instance this is not meant for intaglio printing, however, it appears to be very well suited for this purpose (earliest reference: 1772-1773, England). Due to the quality of their wove paper and also to further technical developments the English papermakers aquire a growing share in the European papermaking market to such an extent that even France starts to import English paper in the 19th century (1834, England, France).

When in the 18th century new etching and engraving techniques come into use and older ones are refined, paper is needed which suits these graphic techniques. Specifications are given regarding paper for printing mezzotints and aquatints, and for the finely etched and engraved printing plates for banknotes and shares (earliest references: 1757, France; 1780, France; 1804, Germany; 1819, England).

Special purposes require special papers. Etchings and engravings are sometimes printed on coloured papers (earliest reference: 1527-1531, Italy), as clair-obscur etchings are printed on grey or blue paper (1633, France). Rembrandt occasionally selects a paper known as "oatmeal" or "cartridge", and for a short while has some Japanese Gampi paper at his disposal (1628, Northern Netherlands; 1645, Northern Netherlands). From 1750 onwards Chinese paper is imported into Europe; this is used for intaglio printing in England and is imitated after 1817 (1750, 1764-1784, 1792, 1817, England).

Large paper formats are not available in the 15th and 16th century. To print larger plates two sheets of paper are pasted together to form one large sheet (1481, Italy; 1550-1555, Antwerp). Thereafter a range of smaller and larger papers is available (1600 ff., Northern Netherlands). The technical developments in the second half of the 18th and the first quarter of the 19th century occur mainly in England. When a very large engraving has to be printed, the English papermaker James Whatman jr. makes to order the largest paper format (135 x 79 cm) of Europe (1772-1773, England). Intaglio paper made specifically for the purpose is manufactured in England from 1786 onwards, and in 1787 one is capable of adding fillers to the pulp (1786-1789, England; 1787, England). For small, engraved plates, such as visiting cards, enamel paper is invented (1828, England). Paper made from cotton rags is not considered strong enough. Bleaching with chlorine is not appreciated, because this is discovered to facilitate degradation of the paper. In general the quality of mechanically manufactured intaglio printing paper is not considered to be adequate (1790-1820, England; 1799, Northern Netherlands; 1837, Germany; 1837, France).

Outside Europe Northern America follows European developments (1795, United States of America). Etchings are made and printed in Japan from 1783 onwards; the etchings are printed using Japanese paper (1783, Japan). In the late 16th and early 17th century the Portuguese produce some copper engravings in Japan, probably printing them on European paper. In the 18th century copper engravings are made and printed in China; these are probably printed on Chinese paper. The present author has not yet had the possibility of studying specimens of the later two types.

After 1850

The search continues for finer papers and papers with a smoother surface which are able to print even the finest grooves of etchings and engravings. This explains the popularity of wove paper with its even structure. After 1850 this changes. Photomechanical etching techniques are invented and plates made in this manner are printed on the finest, whitest and smoothest kinds of paper which are machine-made. Artists, on the contrary, are more and more driven towards manual etching techniques. They look for the kind of handmade papers used by their historical protagonists skimming the market for laid, cream-coloured 17th and 18th century papers or contemporary ones which appear similar. Such a romantic belief persists to the present day, with the printing of digital imagery on a similar paper.

Structure of the list

The information in this list has been put in chronological order. With each year the region is given to which the reference relates, as follows: **1837, Germany.** Sources are to be found under their own years, modern studies under the years to which they relate.

A reference usually starts by a short summary of its contents, where necessary with a comment by the present author added. This annotation may be followed by a passage from an historical text or a passage from a modern study placed between "..." marks. Comments by the present author within passages are placed between square brackets [...]. At the end of the reference the source is given after "> In:" and modern literature is given after "> Lit.:". Articles being part of periodicals or reference works can be either a source or modern literature, but after the description of the proper article always follows "In:" with the description of the larger publication. Where possible there are cross references, such as "see" or "see also under", to solve the lack of an index.

NB 1: before 1800 the term "Northern Netherlands" is used for "The Republic of the Netherlands", thereafter the term "The Netherlands" is used in this list. The town of "Antwerp" stands for "The Southern Netherlands".

NB 2: particular formats of sheets of paper are given the way the authors give them, be it with a certain name (imperiaal), or in milimeters (mm), centimeters (cm) or inches (in).

Chronology

1481, Italy

Both existent copies of a copper engraving are printed on two sheets of paper pasted together before printing to make one larger sheet.

"Bernardo Prevedari, 'Interior of a ruined church or temple, with figures'. 1481. Engraving (H.V.102.1), 705 x 513 mm. British Museum, London. Also known as: 'The departure of St. Barnabas from Milan after having consecrated Anatalone as its bishop (Mulazzani)'. Another copy in the Raccolta Bertarelli in the Castello Sforzesco of Milan.
[P. 106]: "Another very curious feature of the contract [dated 24 October 1481, between the painter Matteo de'Fedeli and the engraver Bernardo Prevedari] when compared to the two extant impressions, is that there is no mention of the printing of the plate. An examination of the two prints reveals that this must have been an extraordinarily complicated matter. First of all, the size of the plate (about 705 x 520 mm) meant that there was no sufficiently large sheet of paper available: in both impressions the image is printed on two sheets of paper of royal size, the top one overlapping the bottom one by about a centimeter. The fact that this strip is in both impressions the best-printed area (fig. 93), and the fact that the [vertical] striations produced in the printing […] follow from one sheet to the other, leave no doubt that the two sheets were glued together before, rather than after, printing."

> Lit.: David Landau and Peter Parshall, The Renaissance print, 1470-1550, Yale, New Haven 1994, p. 104-107, fig. 92-94.

1500-1530 ca., Germany, Northern Netherlands

It is very difficult to describe the qualities of 15th and early 16th century papers. In general Albrecht Dürer and Lucas van Leyden prefer papers for intaglio printing that tend to be somewhat thinner and suppler than their woodcut papers.

P. 21: "Various attempts have been made to describe the range in quality and character of the many papers used for Renaissance prints. However, the discrimination of paper quality is a skill that can best be acquired by direct experience, because of lack of a commonly understood vocabulary it is presently more difficult to translate into words than the qualities of impressions of a given print. [...] none of the accounts of the papers used for Renaissance prints has been able to be very specific about its sundry grades and variations. [...] Dürer's papers were relatively uniform but differing by degree or even accident rather than intention. Thus we can generalize to the extent that Dürer and Lucas van Leyden preferred engraving papers that tended to be somewhat thinner and suppler than their woodcut papers, though this was not always so, and that at least today their colors can be seen to vary from cream to white to grayish tones. However, the overall uniformity of these papers belies any precisely scaled grading. As we have tried to demonstrate in our discussion of early papermaking, this is a practical and unsurprising consequence of Renaissance paper production. [...]

For his most ambitious engravings, Dürer's attention to detail in printing appears to have extended to selecting unusually thin papers of fine surface texture." [Note 239 on p. 405: "[...] watermarks tend to support the hypothesis that different papers in simultaneous use in the workshop were delegated for drawings, engravings, and woodcuts. Of course size was a factor, but not the only one. See Walter Strauss, 'Die Wasserzeichen der Dürerzeichnungen', in: Zeitschrift des Deutschen Verreins für Kunstwissenschaft, vol. 25 (1971), p. 69-74.]"

> Lit.: David Landau and Peter Parshall, The Renaissance print, 1470-1550, Yale, New Haven 1994, p. 21, 314, 405.

1500-1700, Italy

In Italy of the 16th and 17th century only Italian paper is used, with a single exception. It is likely that foreign paper is used more frequently in Venice.

P. XXXIII: "Whether the ojective is to pinpoint the origin of a watermark or to classify a sheet more generically, any study of paper must take into account the ease with which the material was transported, and this often poses a serious problem for the researcher. A paper used in Holland, for example, might easily have been made in another country and exported several years prior to its use. However, in Italy during the period covered in this catalogue, the industry was so firmly and successfully established that there was little, if any need to import paper. In his thoughtful and valuable study of paper and watermarks, Les Filigranes, Charles Briquet stated rather unequivocally that it was extremely unusual to find foreign paper in Italy [Note 6: Briquet 1907, vol. 1, p. XXIV. Although the assumption that Italy did not import large quantities of paper is supported by the fact that it continues to be exported from Venice and Genoa even in the seventeenth century (when the industry was beginning to decline), small amounts may indeed have been imported. However, for this reason, and because a drawing requires only a single sheet for its execution, it is less reasonable to assume that drawing papers from the period were also largely Italian. It also seems very likely that foreign paper was used more frequently in Venice, a city of numerous publishers and intense maritime activity.] This circumstance, in conjunction with the hypothesis that state and municipal archives, when located in or near a papermaking center, are composed largely of papers from that center, [Note 7: Briquet 1907, vol. 1, p. XIV.] makes it reasonable to further postulate that many Italian archives contain almost exclusively Italian papers. Therefore, it was in an effort to develop a paradigm for Italian paper which is not dependent on watermarks that this writer began to examine papers in the Archivio di Stato, Florence."

> Lit.: Elizabeth Lunning, "Characteristics of Italian paper in the seventeenth century", in: Sue Welsh Reed, Richard Wallace, Italian etchers of the Renaissance & Baroque, Boston, Mass., 1989, p. XXXII-XLIII.

1527-1531, Italy

The Monogrammist F.P., who worked after Francesco Parmigianino prints some etchings on blue paper.

P. 18-19: "Monogrammist F.P., Hercules and Cerberus, c. 1530. Etching on blue (drawing?) paper. Bartsch, vol. 16, p. 23, nr. 15. Museum of Fine Arts, Boston.

[...] This impression is printed on blue paper, as are other prints by F.P. (for example, the series of Apostles, Bartsch 2-13, at the Museum of Fine Arts, Boston). Parmigianino rarely drew on blue paper; yet his pen [p. 19] drawings for the Pan series etched by F.P. were made on a toned paper that Popham feels may originally have been blue but that has faded to brown. It is possible that when Parmigianino went to Verona and Venice in 1530, he returned with blue paper, which artists of those cities more commonly used for drawing, and may have encouraged F.P. to print etchings on it."

> Lit.: Sue Welsh Reed, Richard Wallace, Italian etchers of the Renaissance & Baroque, Boston, Mass., 1989, p. 18-19, cat. nr. 11.

1550-1555, Antwerp

Large size prints are produced in Antwerp due to Italian influence; large size prints were made in Italy from 1500 onwards.

P. 9: "[...] in 1550 [Hieronymus] Cock established his reputation as a publisher of graphic reproductions with the School of Athens (cat. nr. 1 [printsize is 510 x 815 mm, engraved on two plates, printed on two separte leaves and pasted together to form one larger sheet] after Raphael, executed by the Italian engraver Giogio Ghisi). [Cat. nr. 2 is the Disputa from 1552 also engraved on two plates, size of the whole print is 521 x 844 mm – also printed on two sheets and pasted together]. […] [Ghisi's] return marked the end of the production of large formats."

> Lit.: In de Vier Winden. De prentuitgeverij van Hieronymus Cock 1507/1-1570 te Antwerpen, Rotterdam 1988, p. 9. Additional research by the author.

1553, Germany, Italy

An etching (B 32) by Giovanni Battista d'Angeli del Moro (active in Verona and Venice around 1550) is printed on blue paper; apparently early (contemporary?) impression in a private collection. Observation by the present author.

Augustin Hirschvogel and Hanns Lautensack sometimes printed their etchings on coloured paper. An etching by Lautensack dated 1553 is printed on blue paper; not known if printed in that year.

"Both Hirschvogel and Lautensack also occasionally printed their landscape etchings on colored papers (fig. 379)."
"Fig. 379. Hanns Lautensack, Landscape with a Pollarded Willow, 1553. Etching printed on blue paper (B. 26), 168-112 mm. British Museum London."

> Lit.: David Landau and Peter Parshall, The Renaissance print 1470-1550, New Haven, London 1994, p. 345-346, fig. 379.

1555, Antwerp

Hieronymus Cock publishes copper engravings printed on blue paper, some are highlighted in white or coloured by hand; see fig. 1.

"Two engravings from Coornhert's Victories of Emperor Charles V after Heemskerck, (fig. 93 and Holl. 217), of 1555, recently acquired by the Rijksprentenkabinet (Amsterdam) […]. These demonstrably early impressions are printed on blue paper and heightened with white. They were published by Hieronymous Cock, who may have intended them as presentation copies to a favored patron or friend. [Note 8: Suggested in conversation by Ger Luijten 15 November 1991.] Another series of prints published by Cock, Ornament Cartouches, after Benedetto Battini (figs. 94 and 95), from 1553, are printed on blue paper and have purple backgrounds [painted by hand], again creating a highly finished effect."

> Lit.: Nancy Bialler, Chiaroscuro woodcuts, Hendrick Goltzius (1558-1617) and his time, Amsterdam, Ghent 1992, p. 174, fig. 93-95.

1555 ca.-1565, Italy

Angiolo Falconetto prints an etching with engraved lines on blue paper.

"Angiolo Falconetto, Decorative Panel with Mythological Figures, 1555-1565. Etching and engraving on blue paper. Bartsch, vol. 20, p. 108, nr. 19 (as Falcone). National Gallery of Art, Washington."

> Lit.: Sue Welsh Reed, Richard Wallace, Italian etchers of the Renaissance & Baroque, Boston, Mass, 1989, p. 45-46, cat. nr. 22.

1585-1586, Northern Netherlands

Until now the Northern Netherlands imported paper mainly from Northern France. With the fall of Antwerp in 1585 the sea harbour of Antwerp is closed as is the route over land to Northern France. In the years thereafter the paperproduction in the Northern Netherlands slowly starts – less in Holland, more on the Veluwe, because water power was available there. Most of the paper, however, is imported by way of the Rhine from Switzerland, south-west Germany and north-east France; see also under: 1591, Northern Netherlands, and 1628 ff., Northern Netherlands. The windmill is adapted to give enough power for the paper production. In 1586 a privilege is given for two papermills in Dordrecht and one in Alkmaar later. Some more are also built here, but the manufacture of paper does not seem viable in Holland.

> Lit.: Theo Laurentius, Paper in the Netherlands, [in publication], p. 2-4. After: H. Voorn, "Lombards en Troys, Frans en Bovenlands papier", in: Opstellen over de Koninklijke Bibliotheek en andere studies, Hilversum 1986, p. 312 & H. Voorn, "Uit de oudste geschiedenis van de Amsterdamse Papierhandel", in: Proost-Prikkels, nr. 303, Amsterdam 1967. – Lit.: Jane de Iongh, Van Gelder Zonen, 1784-1934, Haarlem 1934, p. 18.

1587, Spain

Contract between the architectonic draughtsman Juan de Herrera and two Italian printers who are especially brought to Spain to print a series of engravings of the Escorial. The contract stipulates an edition of 4.000 impressions per plate. Italian paper will be imported for the commission.

> Lit.: David Landau and Peter Parshall, The Renaissance print 1470-1550, New Haven, London 1994, p. 381, nt. 167. After: C. Wilkinson Zerner, et al., Philipp II and the Escorial: technology and the representation of architecture, exh. cat., Providence, R.I., 1990, p. 44-45.

1591, Northern Netherlands

From 1591 onwards paper is imported into the Northern Netherlands from Switzerland and Southern Germany.

> [Conversation with Theo Laurentius; see under 1585-1586, Northern Netherlands.]

1600, Northern Netherlands

"By the beginning of the seventeenth century a small but significant number of woodcuts, etchings, and even monotypes were printed on blue paper, including the etching Sheperds and Sheep before a Rock (fig. 110) after Esaias van de Velde (1587-1630)".

> Lit.: Nancy Bialler, Chiaroscuro woodcuts, Hendrick Goltzius (1558-1617) and his time, Amsterdam, Ghent 1992, p. 192, fig. 110.

1600 post., Northern Netherlands

Regarding the paper formats available in the Northern Netherlands in the 17th century.

P. 370-371: "The formats may have varied by a few centimetres, and the measurements below (in mm) are the lowest in the case of each group [Note 55: The data is too limited to allow for

making a well-founded distinction between small and large paper of a single format. A number of mid-range formats, such as lombaert, cited in Claesz.'s stock list, and olifant, used from the end of the seventeenth century, have not been taken into consideration in the present survey. Neither have the enormous paper formats, larger than imperiaal, such as adelaar [format?], been considered here, as they played only a minor rôle in the production of prints and were not used by Muller. Presses large enough to accomodate such formats did not exist. The width of the press on which reproductions after LeBrun were printed at the royal printing house in Paris was 660 mm [no source given]: a sheet of adelaar would have had to be cut in order to be printed on such a press. When these prints were copied in Amsterdam, the printer used a press that was 570 mm wide, just wide enough to accomodate a sheet of imperiaal paper. [Following measurements in milimeters].

	plano	folio	quarto	octavo
imperiaal	550 x 720			
royaal	480 x 580			
mediaan	420 x 540	270 x 420		
gemeen	320 x 420	210 x 320	160 x 210	115 x 160
pot	280 x 350	170 x 280	170 x 140	140 x 85

At the beginning of the seventeenth century it was certainly not yet standard practice to use imperiaal paper for fiolio or quarto impressions – that is why they have not been included above: in such instances, a whole sheet of a smaller format would have been used. In the course of the seventeenth century, a shift took place in the paper formats used in editions of Muller's prints, probably because of a decrease in paper prices. Those prints that around 1600 had been issued on the smallest format, pot, were, towards the end of the century, being issued on the next largest paper format, gemeen: a landscape by Nieuland (H. 13) on a half sheet of pot [printed c. 1620] and a copy after in Nicolaes Visscher's stock on a half sheet of gemeen [printed c. 1680] is a prime example of this development (figs. 195-196). A similar shift occurred in the later editions of plates engraved by Jan Muller.

The bulk of the prints listed in the inventories of prints merchants of the time reflect the use of whole, half, and quarter sheets of gemeen paper. Naturally, prints on imperiaal, royaal and mediaan paper are also cited, but they are significantly fewer in number. When the number of prints printed on small and large formats is compared to the copper plates owned by a publisher, it appears that the smaller plates were printed more frequently. Large paper formats were kept in stock, and recorded in inventories, though never in excess of a few quires – one quire being 24 or 25 sheets – while the smaller formats are listed by ream, and one ream is twenty quires.

Around 1600 imperiaal was a generous format for const [= art prints]. Those prints that required the use of a whole sheet of imperiaal paper were not always printed from a single plate: this would have required not olnly a press that could accomodate large plates but also a means of supply of imperiaal sheets. Often, however, two sheets of a smaller format were attached to one another in order to accommodate the dimensions of the plate to be printed (see fig. 183). There were even instances in which a print of royaal format was printed from two smaller copper plates. It thus appears that the width of the press was of crucial importance; moreover, a large plate would have weighed more than small ones, and copper was sold by the weight, while to make a large plate smooth enough for it to be etched or engraved – in the seventeenth century this process was referred to as 'polishing' – was more labour intensive. Finally, larger format paper were disproportinately more expensive than smaller ones. From the second half of the seventeenth century on, there seems to have been no shortage of imperiaal format paper. In editions of prints in that format, entire sheets were being used. Towards the end of the century, newspaper advertisements mention prints on large paper, the work of De Lairesse, printed on impe- [p. 371] riaal paper and intended to be bound, being one example [see: 1694, Northern Netherlands]. Printing on large paper was already a familiar practice in book publishing [Note 57: Impressions on large paper are cited frequently in eighteenth-century prospectuses of newly issued graphic works; these were more expensive wares. Already in 1666 maps were printed on large and on small paper (G.A Amsterdam, N.A. 1947, Notary D. Doornick, pp. 199-202).]. From the beginning of the eighteenth century, imperiaal paper even came to be used to print images in quarto from it." [Followed by discussion on certain paperformats in use by certain engravers.]

> Lit.: Jan Piet Filedt Kok, Erik Hinterding and Jan van der Waals, "Jan Harmensz. Muller as printmaker – II". In: Print quarterly, vol. 11 (1994) nr. 4 (Dec.), p. 351-378, fig. 183-202.

1620-1625, Northern Netherlands

Some of Hercules Seghers's prints are printed on coloured paper. Some, or maybe all, of the papers are yellowed or browned due to the oil in the paint used for printing and due to overpainting with oil paint.

"HB 8b: yellowish-brown paper
HB 10 Ia: brownish-yellow paper
HB 11: yellow-brown paper
HB 20: brown paper
HB 21 IIId: yellow paper
HB 29h: yellow paper
HB 30: brown paper
HB 37: yellowish-brown paper
HB 51: yellowish paper."

> Lit.: John Rowlands, Hercules Seghers, Amsterdam 1979.

1628 post., Northern Netherlands

Studying the watermarks in Rembrandts prints makes clear that his paper comes from France, Southern Germany and Switzerland; see also under: 1585-1586, Northern Netherlands. For large size etchings Rembrandt sometimes uses French cartridge paper.

> Lit.: George Biörklund, Rembrandt's etchings true and false. A summary catalogue in a distinctive chronological order and completely illustrated, Stockholm (etc.) 1968, 2nd. ed., p. 168. – Cynthia P. Schneider (et al.), Rembrandt's landscapes, drawings and prints, Washington 1990, p. 263-281. – Theo Laurentius (et al.), "Het Amsterdamse onderzoek naar Rembrandts papier: radiografie van de watermerken in de etsen van Rembrandt". In: Bulletin van het Rijksmuseum, vol. 40 (1992) nr. 4, p. 353-384.

1633, France

The French engraver François Perrier (1590-1650), nicknamed Le Bourguignon or Burgundus, makes a series of six etchings of antique statues in clair-obscur. The lines of the images are printed in black from one plate, the highlights in white from a second plate. The plates are printed on grey or brown-grey paper; see also under 1645, France, compare with 1720 ca., Northern Netherlands. After 1633 he would use this technique only occasionally.

> Lit.: Florian Rodari (dir.), Anatomie de la couleur. L'invention de l'estampe en couleurs, Paris, Lausanne, 1996, p. 41-43.

1635, Northern Netherlands

"The beater invented in Holland, was in use as early as 1635 for brown and blue paper and, after 1673, when bronze parts were substituted for those of iron, for white paper production."

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 16. After: Henk Voorn, "New thoughts on old papermaking". In: Papierwereld, vol. 23 (1969) nr. 8 (Aug.), p. 218. – Theo Laurentius, Paper in the Netherlands, [to be published], p. 11-12.

1636, France

A series of six Virtues by Abraham Bosse dated 1636 is printed in black on white paper. The series is printed later – and possibly not under his supervision – as clair-obscur in black and white on grey paper.

> Lit.: Florian Rodari (dir.), Anatomie de la couleur. L'invention de l'estampe en couleurs, Paris, Lausanne, 1996, p. 43-44.

1637-1638, England, Northern Netherlands

Hendrik ter Borcht II makes a series of at least 14 etchings reproducing drawings of Parmigianino, at least 6 of them are printed on blue paper.

> Lit.: Susan Lambert, The image multiplied. Five centuries of printed reproductions of painting and drawings, London 1987, p. 170.

1645, France

Abraham Bosse tells that thick, sized and thin unsized paper is used for intaglio printing. "Le papier tres-fort & bien collé doit tremper dauantage, & ainsi du foible & peu colé moins." He describes his own technique for printing with two plates. Thick paper is recommended and it should be dampened lightly.

"... prenant vne impression de la planche grauée, toute fraischement tirée sur vne carte ou papier tres-espais & rendu vn peu humide".
[The passage "vne carte ou papier tres-espais" is translated as "dick en starck papier" by Pieter Holsteyn (Amsterdam 1662), as "Past(e)board" by William Faithorne (London 1702), and as "Starkes und geleimtes Papier, oder sehr dünne geschlagene Pappe" by Carl Gottlieb Nitzsche (Dresden 1756). Bosse also describes how in his view the clair-obscur prints on grey paper by François Perrier are made; see under: 1633, France, compare with 1720 ca., Northern Netherlands.]
"Il y a quelques années que M. Perrier Bourguignon, vn des bons Peintres du temps, fist voir au public sur du papier gris, un peu brun, des figures dont les contours & hacheures estoient imprimées de Noir & les rehauts de Blanc, le tout en forme de Camayeux".

> In: Abraham Bosse, Traicté des manieres de graver en taille dovce sur l'airin. Par le moyen des eaux fortes & des vernix durs & mols. Ensemble de la façon d'en imprimer les planches & d'en construire la presse, & autres choses concernans lesdits arts, Paris 1645, p. 69, 72, 74. Facsimile reprint: Paris 1979. These passages are present in all twenty editions and translations of Bosse's text upt to 1801.

1645 ca. post, Northern Netherlands

From ca. 1645 onwards Rembrandt prints a number of his etchings on Japanese Gampi paper. In 1643 and 1644 two VOC-ships carry Japanese paper to the Northern Netherlands, after 1648 no more Japanese paper is imported.

> Lit.: George Biörklund, Rembrandt's etchings true and false. A summary catalogue in a distinctive chronological order and completely illustrated, Stockhom (etc.) 1968, 2nd. ed., p. 171-173.

1648, Northern Netherlands

After the Peace of Munster the trade blockades are raised, therefore all kinds of paper from all over Europe are imported in the Northern Netherlands temporarily.

> Lit.: Peter van der Coelen [et al.], Everyday life in Holland's Golden Age. The complete etchings of Adriaen van Ostade, Amsterdam 1998, p. 61, 85.

1666, Northern Netherlands

P. 371, note 57: "[...] Already in 1666 [engraved] maps were printed on large and on small paper (G.A Amsterdam, N.A. 1947, Notary D. Doornick, pp. 199-202)."

> Lit.: Jan Piet Filedt Kok, Erik Hinterding and Jan van der Waals, "Jan Harmensz. Muller as printmaker – II". In: Print quarterly, vol. 11 (1994) nr. 4 (Dec.), p. 351-378, fig. 183-202.

1672, Northern Netherlands

Invasion by England, France, Munster and Cologne in the Northern Netherlands. The import of French paper is prohibited. Papermakers from the Veluwe flee to Holland (Zaanstreek) and carry with them their professional knowledge and the Hollander. From 1673 the production of white paper in the Zaanstreek increases rapidly. The prohibition was raised again in 1674; see under: 1674, Northern Netherlands.

> Lit.: Theo Laurentius, Paper in the Netherlands, [to be published], p. 11. After: H. Voorn, De papiermolens in de provincie Noord-Holland, Haarlem 1960. – Jane de Iongh, Van Gelder Zonen, 1784-1934, Haarlem 1934, p. 18.

1674, Northern Netherlands

The Amsterdam publishing house of the Blaeu family prints books as well as prints, mainly engraved maps. In a letter from Pieter Blaeu to Antonio Magliabechi – dated Amsterdam, 9 November 1674 – Blaeu mentions the raising of the prohibition on the import of French paper (see under 1672, Northern Netherlands), although following taxes on this paper are high. Imposts on one ream of French printing paper (which is 480 sheets) are 6 soldi or piacchi and for a ream of writing paper (which is 500 sheets) 12 piacchi.

"[fol. 170 v.] Sono 3 o 4 settimane al più, che li nostri Signori Stati [= Heren Staten Generaal] hanno [fol. 171 r.] annullato la prohibitione della carta ed altre manufatture francesi, ma sono notabilmente aggravate d'un datio rigoroso: si deve pagare per ogni resima di carta francese fin a 6 soldi o piacchi, poi fin a 12 piacchi della carta da scrivere, ma ciò è più tollerabile per li librari e stampatori che quando non sene può far venire, e si vede che molti cominciano ad apparecchiarsi per intraprendere qualche cosa ò opera e prima non favevano nulla."

> Lit.: Henk Th. van Veen, "Pieter Blaeu and Antionio Magliabechi". In: Quaerendo, vol. 12 (1982) nr. 2 (Spring), p. 155. After: manuscript in the Biblioteca Nazionale Centrale at Florence, shelfmark: B.N.C. Magl. II. I. 382, fol. 170v-171r.

1690-1700, Northern Netherlands

The copper wires in the paper moulds are spaced a little wider. Through this coarser sieve water runs faster from the paper-fibres, thereby increasing the production. This is followed throughout Europe. Due to this the paper surface gets rougher and has to be smoothened.

> Lit.: Theo Laurentius, Paper in the Netherlands, [to be published], p. 12.

1694, Northern Netherlands

Advertisment in the Amsterdamse Courant for prints by Gerard de Lairesse printed on „gr. Imp." (= groot Imperiaal) paper. This paper format was at least 550 x 720 mm; see: 1600, Northern Netherlands.

"T. Amst. by Nic. Visscher gedr. en uytgeg. op gr. Imp. Papier: het Werk van Gerard de Lairesse, seer Kunstz. en vermaert Sch., best. in gr. getal Kunst-Printen soo van Historien, als Sinne-beelden, soo door hem self in het Koper gebragt als geinventeert."

> In: Amsterdamse Courant, (1694) nr. 115 (25 sept.), verso.

1700 post., Northern Netherlands

Export of Dutch paper to Spain, Portugal, the Austrian (= Southern) Netherlands and England.

> Lit.: Jane de Iongh, Van Gelder Zonen, 1784-1934, Haarlem 1934, p. 19.

1700-1800, Northern Netherlands

P. 371, noot 57: "Impressions on large paper are cited frequently in eighteenth-century prospectuses of newly issued graphic works; these were more expensive wares. [...] From the beginning of the eighteenth century, imperiaal paper [550 x 720 mm; see: 1600, Northern Netherlands] even came to be used to print images in quarto from it."

> Lit.: Jan Piet Filedt Kok, Erik Hinterding and Jan van der Waals, "Jan Harmensz. Muller as printmaker – II". In: Print quarterly, vol. 11 (1994) nr. 4 (Dec.), p. 351-378, fig. 183-202.

1720 ca., Northern Netherlands

Around 1720 the Dutch engraver Johannes Glauber, nicknamed Polidor, makes a clair-obscur etching after a drawing by Gerard de Lairesse, a St. Roche praying during pestilence. The lines of the image are printed in black from one plate, the highlights from a second plate in white. The plates are printed on blue paper (three copies seen); see also under: 1633, France.

> Lit.: Ad Stijnman, "Another clair-obscur etching". In: Print quarterly, vol. 10 (1993) nr. 1 (March), p. 58-59.

1725-1750, Germany

Large size etching plate printed on one sheet of paper.

"Johann-Daniel Herz, View on Jerusalem with the Crucifixion, Ascension etc., Augsburg (ca. 1725-1750). Format of the plate: 82 x 121,5 cm; format of the paper: 88 x 130,5 cm (h x w). In private collection."
Texts on the print: "Iohan Daniel Herz Sr invent. delin. sculpsit et excudit Augustae Vindelic. [= Augsburg]". "AA.LL.Societas excudit Vienna et Aug. Vindel." "Cum Gratia et Privileg. Sat. Caes. Majest." Personal observation.

> Lit.: Thieme Becker, Bd. 16, p. 567: "Herz (Hertz), Johann Daniel, d. Ä (1693-1754); Kupferstecher, Verleger zu Augsburg; Prospekt von Jerusalem mit der Kreuzigung Christi, anscheinend nach eigenem Entwurf; Sohn Johann Daniel, d.J., Kupferstecher, Verleger, 1720-1793". – Ch. le Blanc, Manuel de l'amateur d'estampes, Tome premier, Paris 1854 (facsimile reprint Amsterdam 1970), p. 356: "Herz (Johann-Daniel); 18. Jérusalem (Vue de la ville de), avec le crucifiement. Gr. in-fol., avec un texte explicatif." Herz made more large size prints, like: "1. L'Adoration des Mages, Gr. in-fol. 2. Maneto (S.), chef des Servites, reçoit de Clément IV la confirmation au sujet de l'église de l'Annonciation de Florence: Ventura Salimbeni. Gr. in-fol. en Larg. 3-11. Histoire d'Enée: Pietro Berettini. 9 p. gr. in-fol. en Larg. 12. Falconieri construit l'église de l'Annonciation, sur la prière de son frére et de S. Julienne, sa fille: Ventura Salimbeni. Gr. in-fol. en Larg. 13. Un Empereur sur le trône, représentant la ville de Jérusalem. Gr. in-fol". – G.K. Nagler, Neues allgemeines Künstler-Lexicon (etc.), Bd. 6, München 1838, p. 139: "Herz, Johann Daniel; Prospekt von Jerusalem, mit der Kreuzigung Christi. Im grössten Formate, nebst gedruckter Erklärung." And other large size prints: "1. Ein Kaiser auf dem Throne, gr. fol. 2. Derselbe, die Stadt Jerusalem vorstellend, gr. fol. 3. Die Anbetung der Magier, gr. fol. 9. St. Maneto, Haupt der Serviten, erhält von Clemens IV. für die Kirche St. Annunciata zu Florenz die Bestätigung, nach V. Salimbene, gr. qu. fol."

1732, Spain

Account in the cloister of El Paular for three pairs of moulds. ''To weave moulds – 120 Rs, of which 105 were paid for weaving three pairs of moulds for printing paper''. The kind of printing technique is not specified.

> Lit.: Oriol Valls i Subirà, The history of paper in Spain [part III] XVII-XIX centuries, Madrid 1982, p. 91.

1735, Spain

P. 158: "The Romanís (family) were later followed by other paper makers whose factories enjoyed a series of royal tax exemptions."

The text of the first exemption is dated at El Pardo on March 14, 1735.

"Royal Decree in which his Majesty concedes to Joseph and Thomàs Romaní, residents of the town of Capellades, several tax exemptions and privileges for the paper factories which they leave in said place [...]."
P. 159: "Your request having been reviewed by my Board of Trade and the opinion of its treasurer been issued, and taking into account that these are the best factories in Spains, both for the excellence and quality of all the types of paper made there, including fine, printing, demy and plate paper, and these imitate those of Genoa and France in their excellence due to your skill and your expenses and your father"
P. 161: "This Royal Decree was renewed on December 4, 1749, by another Royal Decree that reads as follows:"
P. 162: "... instruments and equipment necessary for manufacturing imperial, plate, demy, protocol, superfine and printing paper ..."

> Lit.: Oriol Valls i Subirà, The history of paper in Spain [part III] XVII-XIX centuries, Madrid 1982, p. 158-162.

1739, France

The French rule of 1739 on the sizing of all kinds of paper.

"Ein Erlaß des französischen Staatsrates vom Jahre 1739 besagt, 'daß die Papiermüller gehalten seyn sollen, ihre Papiere von verschiedenen Sorten und Eigenschaften, sie mögen zur Druckery,

zum Abdruck der Kupferplatten oder zum Schreiben bestimmt seyn, alle auf gleiche Art leimen lassen sollen, bey Strafe der Confiscation derer zur Druckerey oder zum Abdruck der Kupferplatten bestimmten Papiere, wenn sie nicht eben so vollkommen geleimet sind als das Schreibpapier, und hundert Livres Geldbuße'." See also under: 1762, France, Germany.

> Lit.: Armin Renker, Das Buch vom Papier, Leipzig, [ca. 1930?], p. 123.

1741, France

In an Arrêt du conseil du Roi of 18 September 1741, 57 paper formats are named with their weight per ream. The middle and larger formats are for printing, the largest formats especially for intaglio printing (very likely for maps). The smallest size is called Petit Jésus and measures 13,3 x 9,6 pouces (ca. 33,5 x 24 cm.) weighing 6 livres et plus, pas moins de 5 1/2 [ca. 2,5 kilo] per ream; the largest is called Grand Aigle and measures 36 pouces 6 lignes x 24 pouces 9 lignes [ca. 91 x 61 cm., also given as 106 x 75 cm. By Boithias & Mondin] weighing 131 livres ou plus, pas moins de 126 [ca. 57 kilo].

"Quant aux grands formats pour les grands registres, et impressions d'estampes ou de gravures, ils variaient de 50 à 180 livres et portaient pour noms Jésus, Petit Soleil, Capucin, Soleil, Colombier, Grand Aigle, Monde .."

> Lit.: Marie-Hélène Reynaud, Les moulins à papier d'Annonay à l'ère pré-industrielle, les Montgolfiers et Vidalon, Lyon 1981, p. 88-90. See also: J.-L. Boithias, C. Mondin, Les moulins à papier et les anciens papetiers d'Auvergne, Nonette 1981, p. 251.

1745, France

Thick, sized and thin, halfsized paper is used for intaglio printing.

"Le papier très-fort & bien collé doit tremper davantage, & ainsi du foible & peu collé, moins".

> In: Abraham Bosse, De la maniere de graver a l'eau forte et au burin. Avec la façon de construire les presse modernes, & d'imprimer en taille-douce, nouvelle edition, Paris 1745.

1750, Europe

"First use of cloth-backed paper in Europe, used for maps, charts, etc."
"So-called India paper first brought to Europe from China during this year."

> Lit.: Dard Hunter, Papermaking, the history and technique of an ancient craft, facsimile reprint New York 1978, p. 495.

1754-1757, England

James Whatman sr. probably starts the production of wove paper in 1754. John Baskerville publishes his first book with a number of pages printed with text on wove paper in March 1757. Images are not yet printed on wove paper.

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [No place] 1988, p. 68-69.

1755 ca., England

"An anonymous memorandum of about 1755 in the Society of Arts' Guard Book also compared English and French papers. Under 'The Disadvantages of English Paper,' the memorandum draws attention to the use of the Hollander beater, or engine, and to the degree of sizing in English paper. The Hollander did not become established in France until the 1780's.

'English Rags, being cut by Engines, make the Fibers so short, tho' coarse, that the more Size is required to bind them together, to render them firm and serviceable, and makes the Paper of a harder nature.

The Paper, being hardened by excessive Sizeing, its elasticity is taken off, which prevents its sucking out the Ink from the Plate, and occasions the Print to be more Feeble and Pale.

The Knotts in the Rags are drawn through the Engine, and not broke; consequently remain in the Paper, and, if taken out, make a hole.'

These themes are contrasted under 'Qualities of French Paper.' 'French Rags were beat with Hammers. By this means the fibers are long and fine, and therefore hold together with less Size and the Paper proves the softer and fitter for Printing.

The Paper, by not being so much Sized, keeps its elasticity, and sucks the Ink out of the Plate, therefore renders the Prints more Brilliant and full of Colour.

The Knotts in the Rags are crushed by the Hammers.'"

(The Memo ends by repudiating the excuse that French water is better.)

> Lit.: Thomas Balston, James Whatman Father & Son, London 1957, p. 35. – John Krill, English artist paper, Renaissance to Regency, London 1987, p. 68, 71-72 (after Balston).

1757, France

"Le papier [for mezzotints] doit être ... d'une pâte fine & moëlleuse".

> In: Antoine Gaultier de Montdorge, Gravure en manière noire. In: Encyclopédie ou dictionnaire raisonné des sciences, des arts et des métiers, par une société des gens de lettre. Mis en ordre & publiée par M. Diderot, Paris 1751-1780, T. 7 (1757, republished 1777), p. 903. Same text under: 1773, France.

1760-1770, England

Mezzotints are printed on French paper.

"Four or five days before you think the Plate will be ready for proving, Notice must be given to the Rolling-Press Printer to wet some French Paper, as no other will do for this Work, and as that Time is necessary for it to lie in Wet".

> In: (Carington Bowles?), The artists assistant in drawing, perspective, etching, engraving, mezzotinto-scraping, painting on glass in crayons, and in water-colours, London (between 1760 and 1770], p. 33. Same text under: 1783, England; 1785, England, 1810, England.

1760-1767 post, France

The engraver Louis François suggests how to print with two plates in black and white on grey paper. Joseph Varin tries this out and in 1761 there is reference to his activities. Louis Marin Bonnet makes black and white prints before his departure for Russia in October 1764. After his return in 1767 he produces several prints in black and white on blue paper.

> Lit.: Jacques Herold, Louis-Marin Bonnet (1736-1793): catalogue de l'oeuvre gravé, Paris 1935, p. 6.

1761, Germany

Large size paper from Nuremberg is used for large plates; comment on Dutch and French paper; how to prepare it for printing; blue paper for clair-obscur printing.

"Das Drukpappier. Gemeiniglich nimt man das nürnbergsche Roialpappier zu den grossen Kupfern; das ordinaire holländische

ist hart vom Leime, und schwer zu drukken, und man wälet lieber das ungeleimte holländische dafür. Nicht allemal löset sich dieser Leim der guten Pappiere gleich willig auf; man findet französisches Pappier, dessen angefeuchteter Leim zu gelben Flekken verläuft. Je leimreicher feine Pappiere sind, desto längere Zeit mus man sie durchnezt stehen lassen. Man ziehet die Drukpappiere, vom ungeleimten jedesmal 4 bis 6 Bogen, vom Schreibpappiere nur einen einzelnenen Bogen, in einer Mulde, durch reines Brunnenwasser hindurch."

"Einige unter den alten Malern beobachteten die Weise, ihre radirte Arbeiten mit zwoen Platten abdrukken zu lassen, welches sehr gut ins Auge fiel. Sie bedrukten nämlich ein blaues Pappier, mit einer Platte, welche die Schatten ausdrükte; die andre Platte, auf welche sie die Lichter gestochen hatten, ward hingegen mit einer weissen Farbe abgedrukt [= clair-obscur]."

> In: Johann Samuel Halle, Werkstätte der heutigen Künste, oder die neue Kunsthistorie, Brandenburg und Leipzig, 1761-1765, 4 Bde, Bd. 1 (1761), p. 225-226, 228. Followed by: 1790, Germany; 1792, Germany.

1761, Spain

Paper for mezzotints is old, firm (?), has a fine stucture and is soft.

"El papel en que se ha de imprimir, ha de ser añejo, templado, de pasta fina, y blanda".

> In: Manuel de Rueda, Instruccion para gravar en cobre [etc.], Madrid 1761, p. 166. Facsimile reprints: Madrid 1990, Granada 1991.

1762, France, Germany

La Lande gives the French rule that all paper should have the same sizing; see also: 1739, France. Justi disagrees.

"Unbequemlichkeiten, so bey der Leimung statt finden können." "§. 108.

Die Reglements in Frankreich verordnen unter der Leimung des Schreibe- und Druckpapiers keinen Unterschied zu machen. Dieses ist eine weise Vorsicht, weil man sonst in Gefahr stehen würde, öfters nur halbgeleimtes Papier zum Schreiben zu erlangen. Einige Buchdrucker sind in der That mit einer schwachen Leimung zufrieden. Sie sagen, wenn das papier zu stark geleimet sey; so sey man genöthiget, es desto stärker und in schwachen Lagen einzuweichen, um den Leim wieder davon abzubringen, und daß dieses zu stark geleimte Papier zu nichts diene, als denjenigen, welcher den Bengel ziehet, zu ermüden, und die Lettern abzunutzen. Allein dieser Grund ist von keinem großen Gewichte*). [Comment by Justi: "Dieser Grund ist meines Erachtens nicht so sehr zu verwerfen. Denn man muß bey Verfertigung einer Waare allerdings auf die Bequehmlichkeit derer sehen, die sie verbrauchen. Ueberdieß wird durch die Leimung das Druckpapier ohne alle Noth sehr verteuret; dahingegen ist die Ursache, die hier angeführet wird, nähmlich, daß man in Gefahr stehe, halbgeleimtes Schreibpapier zu erhalten, von gar keiner Erheblichkeit. Wenn die Reglements einmal die Beschaffenheit des Schreibepapiers bestimmen, und durch hohe Strafe verhüten, daß kein Fabricant falsche Zeichen auf seinen Papier gebrauchen darf: so kann man den Papiermacher allemal finden, der halb geleimtes Papier vor Schreibepapier verkaufet. So sehr ich wünsche, daß man in vielen Dingen die Französischen Papiermüllerordnungen in Teutschland nachahmen möge; so nehme ich doch den Punct, auch das Druckpapier zu leimen, ohne Bedenken aus."]

> In: Joseph Jerom de la Lande, übersetzt und kommentiert von Johann Heinrich Gottlob von Justi, Die Kunst Papier zu machen, […] 1762, p. 128-129. Translation of: L'art de faire le papier, Paris 1761; photom. repr. Münster 1984.

1764-1784, England

Francesco Bartolozzi has his reproductive etchings printed with brown ink on Chinese paper. [That is to say, if the impressions are contemporarily printed. Although Chinese paper is available in England in this period, its use in printmaking is not yet common.]

> Lit.: Susan Lambert, The image multiplied. Five centuries of printed reproductions of painting and drawings, London 1987, p. 175.

1772-1773, England

The English papermaker James Whatman jr. produces a large size (53 in x 31 in (= 135 x 79 cm)) paper from 1772 onwards. It is called "Antiquarian", because it is orderd by The Society of Antiquaries for printing a copper engraving by James Basire plate size 49 1/4 in x 27 in (= 125 x 68,5 cm). It is the largest paper format available then. The largest up to that time was a Dutch laid paper of 47 x 27 in (also given as: 48 x 27 1/2 in, or 122 x 70 cm). His successors continued production until 1936. More details on the manufacturing process in Balston. See also under: 1784, England.

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 72-73. – Thomas Balston, James Whatman, father & son, London 1957, p. 152-155.

"James Basire, the first engraver to use this paper [Whatman's "Antiquarian"], requested that it meets the following specifications:

1st. That the Paper be made of a smooth and good Substance with regard to Thickness.

2ndly. That it be not sized with Parchment, nor any Allum used for whitening it.

3rtdly. That the sizing be made of Kid-leather; and the outward Surface of the Paper to approach, as near as may be, to that of the French.

It is of interest that Basire did not request a wove paper."

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 68. After: Thomas Balston, James Whatman Father & Son, London 1957, p. 28-35.

1773, Germany

A so-called "sketch book" containing examples for the student draughtsman. "Tab. XVIII" is printed with black ink on blue paper highlighted with a brush with white watercolour.

"Tab. 18. Eine Bekleidete Akademie, ein Beyspiel der grau in grau-Mahlerei; auf blau Papier nach Tintoret."

> In: Christian Ludolph Reinhold, Das Studium der Zeichenkunst und Mahlerey für Anfänger, Göttingen, Gotha 1773, p. 9.

1773, France

"Le papier [for mezzotints] doit être ... d'une pâte fine & moëlleuse".

> In: [...] Jaubert, Dictionnaire raisonné universel des arts et metiers ... [etc.], Nouvelle édition corrigée et onsidérablement augmentée d'après les mémoires et les procédés des artistes, Paris 1773, 4 Bde.,T. 2, p. 355-356. Same text as under: 1757, France.

1774, Sweden

"Karl Wilhelm Scheele (1742-1786), a Swedish chemist, discovered chlorine, which was in later years used in the bleaching of paper stock." [Up to then paper makers used pure white rags for bright white paper.]

> Lit.: Dard Hunter, Papermaking, the history and technique of an ancient craft, facsimile reprint New York 1978, p. 503. – Jane de Iongh, Van Gelder Zonen, 1784-1934, Haarlem 1934, p. 93.

1775 ff., England

Wove paper is used more and more for illustrations in intaglio techniques in England from 1775 onwards.

"[...] a few sheets of wove paper do appear in Grosse's original editions of his work ["Antiquities of England and Wales"]. Volumes I and II, issued in 1773 and 1774, are printed entirely on laid but a few sheets with copper plate engravings may have been used in volume IV which appeared in 1775. The paper is very thick and heavy and the watermarking is difficult to distinguish. In the supplements issued in 1787, there is a great mixture of paper with some wove paper possibly made by John Bates [...], William Camden's Brittania published in 1789 has a few of the engravings printed on wove paper in the first volume and in the subsequent ones this is used for most of the plates while the text is on laid."

"The use of wove paper was to spread quite quickly for copperplate engravings. For example, the Society of Antiquaries issued a series of prints of architectural subjects in the last quarter of the eighteenth century. The early ones were printed on laid paper but in Volume II of 1788, some were printed on wove and this became more frequent in volume III published between 1792 and 1796. An even more important use of copper-plate engravings was in cartography. Detailed navigational charts were issued which required large sheets of paper. Damp conditions at sea would cause deterioration of glued joints where small pieces of paper had to be assembled to make large ones. Soon charts began to be printed on Whatman paper which ousted its Dutch rivals even on the Continent."

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 74-75.

1777-1782, France

Benjamin Franklin introduces wove paper in France in 1777 and explains how to manufacture it. Father and sons Montgolfier start preparations for the production of wove paper by themselves that same year. Mathieu Johannot begins his production of wove paper in 1778-1779 and Réveillon in 1782.

> Lit.: J. Berthelé [et al.], Contribution à l'histoire de la papeterie en France, Grenoble 1933, p. 33.

1778, England

"Fig. 60. 'Banditti on the Look Out', raking light, catalogue 20. French copperplate paper with little or no sizing. Note its soft surface. Fig. 61. Fibers from 'Banditti', catalogue 20. The fibers are quite long (0,08 cm to 0,52 cm) when compared with the English copper-plate papers made later in the century. The majority of fibers are linen; some are cotton.

Cat. 20. John Hamilton Mortimer (1714?-1779). 'Banditti on the Look Out', 1778. Laid, wm [= watermark] Dovecote.

During most of the eighteenth century, French paper was often preferred for copper-plate printing. This example is both thick and soft and eminently suitable for the purpose. Note the deep plate mark. The paper was made with very little sizing. Stronger sizing would have produced a firmer sheet and possibly a yellowish cast."

> Lit.: John Krill, English artists paper, Regency to Empire, London 1987, p. 66, 71, Fig. 60-61, p. 148, Cat. 20.

1779, Spain

Inquiry by the "Chambre of Commerce" concerning papermaking in Spain, intaglio printing paper ("paper for engraving") is specified. The author remarks that no attention is being paid to the beating of the rags, the bleaching of the paper, its weight nor its measurements, questions are about sizing only.

"Regarding Chap. 11.

[Question] 10: Should paper used for Printing and for Engraving have less sizing than paper manufactured for writing?

[Answer] 10: In order to keep its consistency, paper for printing and engraving should have the same amount of sizing as that used for writing. And, even though some Printers at times reach agreements with manufacturers stipulating that the paper have less sizing, they do so in order to pay less or because they need the paper for printing Gazettes, Romances or other things of little importance."

"Proguntas sobre el Cap°. 11.

[Question] 10. Si el papel para la Imprecion, y para el Estampade es conveniente, ô no que tenga menos coa que el que se fabricas para escrivir.

[Answer] 10. Respuertas sobre el Cap°. 11.

Que el papel para la impresion y estampado, es mui conveniente qe. para su mayor concistencia tenga la misma cola que el de escrivir; y aunqe. algunas Impresores avezes hazen particulares afurtes [?] con la Fabricantes estipulando que el papel tenga menos cola, es por razon de que les salga a menas precio, o porque lo necessitan para imprimir Gazetas, Romanzes, y otras cosas de poca monta."

> Lit.: Oriol Valls i Subirà, The history of paper in Spain [part III] XVII-XIX centuries, Madrid 1982, p. 178-191, ill. 26.

1780, France

In the prospectus by Jean-Baptiste le Prince, who invented an aquatint technique, reference is made to French paper imitating Chinese, perhaps the new wove paper is meant.

"On pourrait même assurer que nos manufactures de papiers, imitant ceux de la Chine, y trouveraient un grand avantage, en obtenant le préférence sur ces derniers, par le goût perfectionné qui règne en France, cette préférence n'étendrait-elle pas cette branche de commerce?"

> In: [Jean Baptiste] Le Prince, [...] Lesacher et [...] Carault, Prospectus de la souscription tentée par Le Prince pour la vente de son procédé, Paris 10 july 1780.

> Lit.: Jules Hédou, Jean-Baptiste le Prince 1734-1781, peintre et graveur, étude biographique et catalogue raisonnee de son oeuvre gravé suivi de nombreux documents inédits, Paris 1879. Facsimile reprint: Amsterdam 1970, p. 193-194.

1780, Germany

For intaglio printing white, strong paper should be used, though not too heavily sized.

P. 231: "Zum Abdrucken [von Radierungen] nehme man zwar weißes und starkes, jedoch nicht zu sehr geleimtes Papier."

> In: [Friedrich Christ. Müller], Ausführliche Abhandlung über die Silhouetten und deren Zeichnung, Verjüngung, Verzierung und Vervielfältigung, Frankfurt und Leipzig, 1780, p. 231.

1780, Spain

Impositions on paper imported to Spain to support the own paper production; dated 6 November 1780. Intaglio printing paper is taxed highest.

P. 192: "Article 1: All the customs of these Kingdoms, including those of Mallorca and Ibiza, must demand without exeption that paper of foreign manufacture pay all entry duties, including, excise taxes of three reales in copper coins for each ream of coarse paper; seven reales for common white paper, fourteen for demy; twenty one for each ream of plate paper ... [etc.]".

> Lit.: Oriol Valls i Subirà, The history of paper in Spain [part III] XVII-XIX centuries, Madrid 1982, p. 193-197.

1781, England

"The term 'Copper Plate Printing Paper' [for intaglio printing paper] appeared in the 1781 paper production and excise tables which cancelled the two previous acts of 1711 and 1713, neither of which had mentioned it."

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 68. After: Thomas Balston, James Whatman Father & Son, London 1957, p. 68.

1782, France

The first engraving printed on French wove paper in France is a portrait of Henry IV.

"[...] le dit sieur Pierres imprimait, dan le format in-8°, un portrait du roi Henri IV gravé par le sieur Le Clerc; [...] le frontispice de cet ouvrage portait la date de 1783, mais [...] l'approbation était du 23 décembre 1782.

[...] ce portrait était précédé d'un avis conçu en ces termes: 'On a tiré 50 exemplaires de cet ouvrage sur papier superfin de la fabrique de M. Mathieu Johannot, 50 exemplaires sur papier-vélin, le premier fait en France, par M. Réveillon, déjà connu avantageusement ... Cet ouvrage est le premier sur lequel l'essai du papier-vélin ait été fait.' "

> Lit.: J. Berthelé [et al.], Contribution à l'histoire de la papeterie en France, Grenoble 1933, p. 33.

1782-1783, France

In France the first book to be printed on French wove paper is announced, it probably contains no illustrations. From 1783 onwards books printed on wove paper are regularly published.

"[...] vers la fin de décembre de l'année 1782, le sieur Pierres imprimeur de Paris, fit paraître le prospectus d'un livre intitulé Oevres de Plutarque, important ouvrage en 24 volumes in-8°, qu'il proposait en souscription. [...] ce prospectus indiquait qu'il serait tiré de ce livre 100 exemplaires sur papier de Hollande, 50 sur papier superfin de la fabrication de Mathieu Johannot d'Annonay, et quelques exemplaires sur du papier vélin, le premier fabriqué en France par un sieur Réveillon."

> Lit.: J. Berthelé [et al.], Contribution à l'histoire de la papeterie en France, Grenoble 1933, p. 35-36.

1783, England

Mezzotints are printed on French paper.

"Four or five days before you think the plate will be ready for proving, notice must be given to the rolling-press printer, to wet some French paper, as no other will do for this work, and as that time is necessary for it to lie in wet."

> In: The school of wisdom and arts ... [etc.], [3rd ed.?], Berwick 1783, p. 259. Same text as under: 1760-1770, England; 1785, England.

1783, Japan

In 1783 the Japanese artist Shiba Kôkan makes and prints the first etching ever in Japan. He, and the Japanese etchers after him print on Japanese paper. Observation by the present author.

Engravings were made and printed by the Portuguese and their Japanese pupils in Japan around 1600, but probably printed on European paper.

> Lit.: Shiba Kôkan, his versatile life, Kobe & Machida 1996, p. 57.

1784, England

Double Atlas (55 x 31 1/3 in, ca. 138 x 78 cm) is supposed to be larger than Antiquarian (see: 1772-1773, England). There are, however, no indications that this paper format is actually manufactured.

"Both in Whatman's time and later Antiquarian was generally known to the workers as Double Atlas. In the Excise Act fo 1784 (21 Geo. III, c. 24) Double Atlas, 55 x 31 1/4 in., appears as the largest size of Writing papers, but there is no evidence that any sheet larger than Antiquarian, 53 x 31 in., was ever made by hand in England."

> Lit.: Thomas Balston, James Whatman, father & son, London 1957, p. 34.

"White papers were classed as (1) Writing, or Writing and Copperplate, and (2) Printing, though Writing papers were often used for fine books. Each class was made in various sizes, each with a traditional name, but where a size name was common to both classes, it did not represent exactly the same dimensions for both, Printing Royal, Medium and Demy being larger than the corresponding Writing sizes.

The following tabel is taken from the list of sizes given in [the Excise Act of 1784] 21 Geo. III, c. 24. Writing, or Copperplate and Writing [follow twelve formats, largest is Double Atlas of 55 x 31 1/4 in, ca. 138 x 78 cm; smallest is Pott of 15 1/2 x 12 1/2 in, ca. 39 x 31,5 cm]; Printing [follow six formats].

Double Atlas was used at Springfield as an alternative title for Antiquarian, but Antiquarian was never made larger than 53 x 31 in, and there is no evidence that any larger paper was ever made by hand in Great Britain. It is possible that prior to the Agreement of 1859 Hollingworths claimed the sole right to use the title Antiquarian, and that Springfield therefore used the alternative."

> Lit.: Thomas Balston, William Balston, paper maker 1759-1849, London 1954, p. 158.

1785, England

Mezzotints are printed on French paper.

"In four or five days before you think the plate will be ready for proving, wet some French paper, as no other will do so well for this work, that time is necessary for it to lie wet"

> In: John Imison, The school of arts ... [etc.], London (1785?), 2 vol., vol. 1, p. 61. Same text under: 1760-1770, England; 1783, England; 1810, England.

1785, Germany

Printing paper should be fine and its sizing not too strong.

Vol. 7, Ded-Eh (1785?), p. 675, col. 2: "Drucken Bücher und Kupfer. [...] Das Papier, worauf der Abdruck geschehen soll, und das fein und nicht zu stark geleimt seyn muß"

> In: Von einer Gesellschaft Gelehrten, Deutsche Encyclopädie oder allgemeines Real-Wörterbuch aller Künste und Wissenschafften, Frankfurt am Mayn 1778-1804, 23 Th.

1786-1789, England

The English papermaker Mr Lepard receives a Silver Medal in 1786 for the manufacture, in England and Wales, of a paper suited for intaglio printing and having similar qualities as that imported from France. The premium stays and in 1787 there are two candidates for the Gold Medal, which is to be had by John Bates. A "Mr Hadrill, Copper Plate Printer" gives his comments, with some technical details, and compares the French paper with Bates's paper. A "Mr Webber [Artist]" gives his comments on the quality of the paper to Mr Hadril. All prints in the cited volume of the Transactions are printed on Bates's wove paper.

P. XIX: "It may not be here improper to congratulate the Publick, on the full establishment of a Manufacture, in this [p. XX] Country, which it may without vanity be said, has risen to its present height, under the auspices of the Society. The Manufacture now alluded to is that of Paper for taking Impressions from Engraved or Mezzotinto Plates. And as all the Prints in this Volume, are on Paper made by Mr Bates of Wickham Marsh, Bucks, to whom the gold medal was last year adjudged, it is plain that Impressions of even the softest and most delicate work in Mezzotinto, may be taken on English, equally as well, as on the best Paper imported form abroad for that purpose."
P. 167: "The manufacturing, in England or Wales, Paper equally fit for receiving impressions of Engraved copper Plates, with that imported from France, was considered by the Society soon after their institution, as a proper subject for their encouragement: And the great improvements in the art of Engraving that have within these few years been made in this Kingdom, by which the exportation of Prints to foreign Countries, is become an extensive article of Commerce, renders the obtaining such Paper at this time a very desirable circumstance.
[P. 168] The same Premium being continued in the year 1787, two Candidates appeared, and the Gold Medal was adjudged to Mr John Bates of Wickham Marsh, Buckinghamshire, in consequence of a due examination of the impressions taken on the Paper, and compared with the French, and the following opinions received from the copper Plate Printer and Artist, who had been applied to on the occasion.
[P. 169] Letter from Mr [Peter] Hadrill, copper Plate Printer, No. 11, George Street, Portman Square; dated March 26, 1787. Gentlemen, I have made trial of the different specimens of Paper received from the Society, and find upon the nicest observaton that which is marked with five holes, is by far the best, I wetted it against the French Paper, and found it takes the water equally well, and will keep much longer before it mildews, and is much superior to the French in cleanness; in this there are no Iron Moulds, which are very common in the French, and a very great defect. With respect to taking the impression, the different Prints taken on each will shew by comparison, that they appear very little, if any, inferior to the French. I am, Gentlemen, your most humble servant, Peter Hadrill. To the Committee of Manufactures, Adelphi. – Extract of a letter from Mr. Webber to Mr. Hadrill; dated Oxford Street, No 312. March 27, 1787. Mr. Webber informs Mr Hadrill, that he considers the Paper that has five holes on the margin, to be much the best for printing, as it is of a softer texture than the other, and the impressions are in every respect superior. He would not have any objection to have that Paper made use of for some of his works in future."

> In: Transactions of the Society for the Encouragement of Arts, Manufactures and Commerce, vol. 6 (1789), p. 167-170.

1787, England

The Englishman Hooper produces a special intaglio printing paper using fillers. Even the finest lines can be printed with it.

"Erfindung eines besonderen Kupferdruckpapiers durch Hooper in London (Patent von September [not in Woodcroft]). Einer 50 kg Lumpenmasse werden 20 kg Alabaster, 5 kg Talg und 5 kg Gips (kalziniert) beigefügt und zur Leimung 6 kg Kandiszucker oder Reis oder Ulmer Graupen verwendet. Die Beimischung von Kalk läßt alle Zwischenräume im Fasergefüge des Papiers gut ausfüllen und ergibt eine zusammenhängende Masse, die auch die feinsten Züge der Kupfertafeln aufnimmt (frühe Anwendung von Füllstoffen)."
Weiss probably summarised after Krünitz: "3. Ein neues Papier zum Abdrucke der Kupferstiche.

Herr Hooper in London hat ein vorzügliches gutes Papier zum Abdrucke der Kupferstiche erfunden. Auf einen Centner zugerichter Lumpen nimmt man 40 Pfund Alabaster, 10 Pf. Talg, 10 Pf. Gyps, und kalciniert diese drey Stücke in einem Tiegel. Nach dem Erkalten werden 12 Pf. Kandiszucker, oder eine hinreichende Menge Leim, welcher aus Reiß oder geperlter Gerste (Ulmer Graupe) gezogen ist, hinzugefügt, und damit auf gewöhnliche Art verfahren. Der Grund, warum dieses Papier sich vorzüglich gut zum Abdrucke der Kupferstiche schickt, liegt darin, weil durch die fein pulverisirten kalkartigen Substanzen, welche der Teig in seine Masse aufnimmt, alle Zwischenräume des Papiers ausgefüllt werden, wodurch die Fläche des Papier zu einer genau zusammenhangenden Masse wird, die auch die feinsten Züge der Kupfertafel annehmen und ununterbrochen darstellen kann."

> In: Johann Georg Krünitz, Oeconomische Encyclopädie, Th. 106 (1807), p. 743

> Lit.: Wisso Weiß, Zeittafel zur Papiergeschichte, Leipzig 1983, p. 207.

"In 1787, Samuel Hooper, a London stationer, wrote that if left in the paper the [iron] specks could disfigure the print's image. In order to avoid this, some printers picked out the specks before printing.

Hooper also regretted that Franch paper was made on „common moulds" (laid moulds) rather than „wove moulds" – an indication of the developing interest in wove paper for copper-plate printing."

> In: Samuel Hooper, English Patent No. 1622, 1787, about printing paper.

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 75.

1788-1800, England

"The earliest book [in England] discovered so far in which wove paper has been used throughout is Richard Sheperd's The Ground and Credibility of the Christian Religion published in 1788. From that time on, it is possible to find a steady trickle of books printed on wove paper. [...] Yet, for the greater part of the 1790's, wove paper was confined mostly to the plates in ordinary books, possibly partly through its greater cost."

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 74-75.

1790, Germany

Writing paper and Dutch printing paper are used for intaglio printing.

"Die Materialien des Kupferdruckers sind also Druckpapier Holländisch und Schreibpapier".

> In: Johann Peter Voit, Faßliche Beschreibung der gemeinnützlichsten Künste und Handwerke für junge Leute, Nürnberg 1786-1790, Th. 2 (1790), p. 93. After: 1761, Germany.

1790-1820, England

Cotton is mixed with linen especially to make intaglio printing paper. The cotton fibre gives volume, softness and opacity.

"The principle papermaking fibres were flax, used in the form of linen, and cotton. Flax was preferred; its fibre was longer and stronger, and its fibre wall was straighter and thicker. When beaten during the papermaking process, the fibre would splinter rather easily along its length producing small strands of fibre, called fibrils. These fibrils, which would interlock when the paper sheet was formed, imparted additional strength to the paper. Cotton, by contrast, had a thinner fibre wall which permitted the fibre to collapse, twist, and become ribbon-like. It did not have the easy fibrillation of flax. The twist of the thinner cotton fibres produced bulk and opacity in paper, as well as softness – an important quality for copper-plate paper."
"The preceeding references to a desirable paper for copper-plate printing described a paper that had an even surface, was free of flaws and had little sizing. By the last decade of the century, just such an English paper was coming into general use. A number of procedures produced the desired soft and even surface. Along with the reduction of sizing, the most obvious was the use of the wove mould. This latter point cannot be overemphasized as English wove copper-plate paper was the harbinger of the avalanche of plate papers which was soon to follow in the nineteenth century.

Softness was also obtained by the additon of the more pliable cotton fibre to the linen furnish. This became common during the early nineteenth century, particularly as cotton itself became more abundant. In 1816, a correspondent wrote to John Dickinson, stationer and papermaker: 'We find the use, now so commonly made in this Country, of British Cotton Goods, influences to render Linen Rags scarce. Cotton, during the last decades of the eighteenth century, had become more accessible due to the rapid developments in the English textile industry.'"

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 13,75.

1790-1830, France, Switzerland

The best and most beautiful intaglio printing paper is manufactured by Johann Christoph de Rudolf, paper by Dupis is also famous.

"Das beste und schönste Kupferdruckpapier der Welt fertigt Johann Christoph de Rudolf Im Hof in Basel. Berühmt ist auch das Kupferdruckpapier von Dupis in der Auvergne, es wird besonders in England verwendet."

> Lit.: Wisso Weiß, Zeittafel zur Papiergeschichte, Leipzig 1983, p. 211.

1790, Italy

English wove paper comes into use on the Continent around 1790. Engravings of maps are printed on Whatman wove paper in Napels in the Officina Topographica. The Dutch laid paper manufactured by the mills of Blauw and Honig used until then are replaced completely by Whatman's wove paper in 1795.

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 74.

1790, Northern Netherlands

The Dutch papermill of Adriaan Rogge on the river Zaan starts its first experiments with the manufacture of wove paper.

> Lit.: Jane de Iongh, Van Gelder Zonen 1784-1934, Haarlem 1934, p. 75.

1792, Germany

Intaglio printing paper should be lightly sized; large formats come from Nuremberg; predilection for half sized Dutch paper instead of full sized; French paper is best.

"Das Papier, worauf man abdruckt muß nicht zu stark geleimt seyn, denn der Leim verhindert die Vereinigung der Schwärze mit dem Papier. Zu großen Kupfern nimmt man gemeinglich nürnberger Roial-Papier. Das ordinäre holländische ist hart vom Leime, und schwer zu bedrucken; man wählt daher lieber das ungeleimte holländische. Das französische Papier ist hierzu das beste, weil es wenig und fein geleimt ist."

> In: Johann Georg Krünitz, Oeconomische Encyclopädie, oder allgemeines System der Land- Haus und Staats-Wirtschaft, in alphabetischer Ordnung. 56. Theil. Berlin 1792, p. 234. After: 1761, Germany.

1792, England

Chinese paper is used for intaglio printing, although Krill says (p. 77): "Fascination with paper's printing surface led, by the end of the eighteenth century, to the placement of a thin, soft, unsized paper of the plate paper during printing (catalogue 25, 26: figs. 71, 72). The thin paper was at that time called India paper but today, it is more correctly called China paper. A print on such paper is now called chine collé." Krill's reproduction clearly shows the China paper is larger than the plate, therefore the chine collé technique cannot be used. It looks as if the etching is printed on China paper only and thereafter glued onto the European paper.

"Frontispiece for The Polite Repository, proof sheet, [London] 1792. This [laid] French copper-plate paper is made from linen and has quite long fibers (0.13 cm to 0.43 cm). The China paper, which bears [John] Peltro's etching [thus no chine collé] after Humphrey Repton, is made from mitsumata, a bast fiber in the orient for papermaking."
"Cat. 25. John Peltro (1760-1808), Frontispiece for The Polite Repositry, proof sheet, 1792. Laid, copper-plate paper with China paper."

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 77-79, fig. 71; p. 149, cat. 25.

1792, England, Northern Netherlands

The Dutch engraver Hendrik Meijer (1737-1793) etches a series of twelve landscapes in soft-ground. He works in London at that moment, where on 1 May 1792 his prints are published. All etchings are printed on wove paper with the watermark JWHATMAN. These are probably the first etchings by a Dutch engraver printed on wove paper.

> Lit.: Ad Stijnman, "Nederlandse etsers en de vernis-mou techniek". In: Delineavit et sculpsit, (1991) nr. 5 (May), p. 28-31.

1794, England

"John Boydell, publisher of books and prints, first ordered paper from Whatman in 1785. He shared his appreciation of the paper when he spoke with Joseph Farington, the artist, in 1794: 'I came home with the Alderman [John Boydell] who told me Whatman now makes printing paper equal in quality to French paper, and has an advantage from being manufactured more neatly.'"

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 66. After: Kenneth Garlick and Angus Macintyre (eds.), The diary of Joseph Farington, New Haven, London 1978, p. 209.

1795, Germany

"The dates for the first production of wove paper elsewhere are Germany [...] in 1795 [...]."

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history , [...] 1988, p. 78.

1795-1796, Germany

Paper with a fine structure is suited for mezzotints.

> In: Johann Conrad Gütle, Beschreibung der Kunst in Kupfer zu stechen, Nürnberg, Altdorf, 1795-1796, 3 Bde, Bd. 1, p. 256-257.

1795, United States of America

"The dates for the first production of wove paper elsewhere are [...] the United States of America in 1795 [...]."

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 78.

1795, Germany, Switzerland

Voluminous, fine and unsized paper is best for intaglio printing; the author discusses the qualities of different papers.

"Vom Papier und Einweichen oder Befeuchten derßelben.

Zum Druck ist dickleibiges, feines und ungeleimtes Papier das Beste. [...] Halbgeleimtes Papier muß längere Zeit feucht erhalten werden. [...] Geleimtes und festes Papier, zum Beyspiel das Holländische, das man gewöhnlich zur Illumination gebraucht, darf, wenn man es zu diesem Zweck anwenden will, nicht sehr lange Zeit feucht gehalten werden, damit die Farbe im bearbeiten der Illumination nicht durchfließe. [...] Das Englische Papier muß am längsten feucht gehalten werden. [...] Grobkörniges und schlechtes Papier, wie auch das so genannte Postpapier, liefert die schlechtesten Drücke.

Ich habe Abdrücke von Chodowieckischen Allmanach-Täfelchen gesehen, die, um den Allmanach geschmeidig und dünne zu halten, auf Postpapier abgezogen waren; beym ersten Anblick derselben stand ich lange an, ob es Nachstiche oder aufgearbeitete Tafeln seyn mögten, wenn ich nicht durch Vergleichung der nähmlichen Abdrücke auf gutem Papier von der Gewißheit der Originalien überzeugt worden wäre. So können oft Abdrücke, wenn die Tafel noch so schön und gut bearbeitet ist, aus Unwißenheit oder Sparsamkeit des Verlegers ganz verdorben, und ein Künstler dadurch in Mißkredit gebracht werden."

> In: Johann Rudof Schellenberg, Kurze Abhandlung über die Aetzkunst, Winterthur, 1796, p. 49-51. Facsimile reprint: Marburg an der Lahn 1988.

1796, Italy

"The dates for the first production of wove paper elsewhere are [...] Italy 1796 [...]."

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 78.

1796, Northern Netherlands

Mezzotints are printed on fine, voluminous paper.

"Het papier, waarop men [mezzotinten] drukt, moet ... fijn en vleeschig zijn."

> In: Arend Fokke, Simonsz., De graveur ... [etc.], Dordrecht, 1796, p. 310. After: 1757, France; or: 1773, France.

1797, England

"The Encyclopaedia Brittanica of 1797 ... described paper for copper-plates as being of 'Soft and equal stuff', 'of natural whiteness', of regular grain, and of such subtelty that it could take 'the soft and delicate touches to the plate'".

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 68. After: Encyclopaedia Britannica, vol. 13, 3rd. ed., Edinburgh 1797, p. 715.

1797, England, France

"The French have very well imitated drawings on blue paper, by using two plates; one of which printed the black-chalk effect, the other the white-chalk [which is clair-obscur]: on the same idea, chalk plates printed in black, on blue paper, may afterwards be touched with white-chalk, to a very pleasing effect."

> In: A compendium of colors, and other materials used in the arts dependant on design, with remarks on their nature and uses: including the method of drawing in chalk, crayons, &c. of painting in water colors, crayons, &c. of engraving in strokes, chalks, mezzotinto, aquatinta, &c. of modelling, and of sculpture, &c. &c., [London] [1797], 7th edition [?], p. 189.

1799, Northern Netherlands

Paper made from cotton rags is not strong enough.

"De Papierlompen zyn schaarser geworden, zedert de mindere standen zich ook met Catoenen Stoffen kleeden, want de Catoenen vodden geeven geen stevig Papier."

> In: Oeconomische courant. Ter bevordering van nationale huishoudkunde, nyverheid, koophandel, zeevaart, fabrieken, trafieken, beoefenende konsten, landbouw, en alle andere middelen van bestaan, vol. 1 (1799) nr. 73 (16 Oct.), p. 166.

1800, Germany

Coloured, writing and Dutch paper are used for intaglio printing.

"4) Wie Kupferdrucker das schöne bunte Papier feuchten sollen.

Sobald ein Kupferdrucker ein solches buntes Papier zu drucken hat, so darf er sein Papier nicht eher feuchten bis er zu drucken anfängt, welches aber mit dem Schwamme auf der Rückseite von Blatt zu Blatt geschehen muß, das heißt, er darf niemals mehr als ein Blatt feuchten."

"18) Wie Kupferdrucker ihr Papier gut feuchten sollen.

Erstlich alle Sorten Schreib- und Holländische Papier müssen warm gefeuchtet werden, zweytens muß der Kupferdrucker sein Wasser mit Alaun versetzen, welches den Nutzen hat, daß sich die Kupfer gut abdrucken und daß nicht leicht Flecken in das Papier kommen."

> In: Christoph Friedrich Theodosius von Schad (comp.), Praktisches Handbuch für Zeichner, Kupferstecher, Illuministen, Kupferdrucker und Kunstliebhaber, Augsburg 1800, p. 54, 71.

1800 ca., England

Coloured English intaglio printing paper.

"Trade card: Thomas Cobb, c. 1800 ... Cobb made significant contributions to the manufacture of colored paper."
"Colour'd Paper, by the Kings Patent to Tho.s Cobb. Printing ... Paper ... Adapted for Copper-Plates. Prints, Maps & Plans ... Frontispieces. Title Pages for Books".

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 96, fig. 88.

1802, England

"Copperplate Paper" is not the name of a particular kind of intaglio printing paper.

"Copperplate Paper of various Colours, for lining Boxes, etc."
"Though the names of most of the fancy papers are easily understood, some require explanation. ... copperplate paper referred to a paper which had a design printed from an engraved or etched copper-plate".

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 126, 129. After: Advertisement of Rudolph Ackermann, London 1802.

1803, The Netherlands

Book illustrations are printed in the Netherlands on wove paper shortly after 1800. The book referred to is probably the oldest Dutch publication containing prints on wove paper.

"De afdruk der plaaten geschiedt op het best velin papier".

> In: E. Maaskamp, Afbeeldingen van de kleeding, zeden en gewoonten in de Bataafsche republiek, met den aanvang der negentiende eeuw = Tableaux de l'habillement, des moeurs et des coutumes dans la république Batave, au commencement du dix-neuvième siècle, Amsterdam, London 1803-1807.

> Lit.: Ad Stijnman (et al., ed.), De techniek van de Nederlandse boekillustratie in de 19e eeuw, Amstelveen 1995, p. 45.

1804, The Netherlands

Wove paper is manufactured by the firm of Van Gelder Schouten & Comp.; they receive a gold medal.

"In 1804 [werd] de firma [Van Gelder Schouten & Comp] door den Oeconomischen Tak der Hollandsche Maatschappij van Wetenschappen (de latere Maatschappij van Nijverheid) bekroond ... voor de vervaardiging van velin papier." "Gouden eereprijs voor het maken van velinpapier, 1804 [illustration of the medal]: 'Pieter Smidt van Gelder te Wormerveer MCCCCIV'."

> Lit.: Jane de Iongh, Van Gelder Zonen, 1784-1934, Haarlem 1934, p. 75.

1805, England

"January and March for The Polite Repositry, proof sheet, 1805. Etching with engraving. Wove, copper-plate paper with china paper.

Printing surfaces were further refined by the application of a thin tissue over the plate paper, a process now called chine collé. Here the tissue is a china paper. ... The 1805 print is on the newer wove copper-plate paper."

> Lit. John Krill, English artists paper, Regency to Empire, London 1987, p. 79, fig. 72; p. 149, cat. 26.

1805, Germany

"Noch habe ich in Ansehung des Papiers einiges zu bemerken.

Es ist eine schon bekannte Sache, dass zu Abdrücken in Aqua tinta das beste halb geleimte Schweizerpapier erfo[r]dert werde. Ich halte es aber dennoch für nothwendig, solches zu erwähnen, weil ich noch besonders anzurathen habe, dass man zu dieser Manier immer das weichste und sanfteste Papier aussuche."

> In: Paul Wolfgang Schwarz, Neue und gründliche Art die Aquatinta oder Tuschmanier auf das Geschwindeste ohne alle Unterweisung für sich zu erlernen, Nürnberg und Sulzbach 1805, p. 94.

1807, Germany

Printing paper should be voluminous, smooth, without knots, folds and wrinkles, white by nature, without a blue veil, weaker sized than writing paper, but still has to be strong. The freezing of printing paper makes it whiter and gives other favourable properties.

"Über die erwünschte Beschaffenheit ... vom Druckpapier ... sagt Krünitz: 'Dieses Papier muß stoffreich, sehr glatt, ohne Falten, ohne Runzeln, von einer natürlichen Weiße, ohne einige blaue Schattierung, minder stark geleimt sein als das Schreibpapier, aber doch so starck, daß es die Druckzüge mit Nettighkeit darstellt, welches es nicht tun kann, wenn es weichlich und schlecht ist. Überdies erhält es seine Festigkeit mehr von seinem Leim, als von der Beschaffenheit des Teigs, woraus es gemacht wird, welcher hohl und fähig sein muß nachzugeben, wenn es beim Auflegen der Druckzüge gequetscht wird.' Er setzt hinzu, daß die Eigenschaften des Stoffes, aus dem ein gutes Druckpapier hergestellt werden soll, erfordern, daß die Lumpen im voraus einem längeren Faulungsprozeß unterworfen werden. Ganz besonders gilt dies von dem Papier, das zum Druck [p. 123] von Kupferstichen Verwendung finden soll, von dem Krünitz überdies berichtet, daß sein Stoff, rein, ohne Knoten und ohne Noppen sein müsse, das Korn sehr glatt, ohne Falten und Runzeln. Daher müsse dies Papier langsam an tiefen Orten getrockent werden, damit das Korn während des Trocknens nicht zu sehr heraustrete. Auch klimatische Einflüsse spielen hier eine Rolle. Druckpapier, das im Frost getrockent wurde, ist weißer als anderes und hat verschiedene für den Druck besonders günstige Eigenschaften. Frühere Zeiten unterschieden sogar zwischen Sommer- und Winterpapier. Die Holländer setzten den Papierstoff auf großen Tüchern Tag und Nach dem Frost aus."

> Lit.: Armin Renker, Das Buch vom Papier, Leipzig [ca. 1930?], p. 122-123. After: Johann Georg Krünitz, Oeconomische Encyclopädie, Th. 106 (1807).

Krünitz describes different kinds of papers for various purposes; Druckpapier as described above. Rags for intaglio printing paper are best left to rot, the sheets ought to be dried slowly to prevent folds which are caused by the unequal distribution of moisture in the paper. Paper from the Auvergne is best for intaglio printing.

P. 719-720: "Papier zu Kupferstichen.

Der Kupferstich erfordert ein Papier, welches die nähmlichen Eigenschaften hat, wie das Druckpapier, in Bezug auf den Zustand seines Teigs, welcher bis auf einen gewissen Grad gefault seyn muß [above is mentioned that the rags for printing paper, Druckpapier, are partly rotted, mainly beaten, less processed in a Hollander]; denn es ist durch Erfahrung bewiesen, daß der Kupferstich auf einem Papier nicht haften würde, welches, aus nicht gefaultem Teige gemacht ist. Der Teig muß überdem rein, ohne Knoten, ohne Noppen seyn; das Korn muß sehr

glatt, ohne Falten, und ohne Runzeln seyn. Daher muß das Papier langsam an tiefen Orten getrocknet werden, damit das Korn während [p. 720] des Abtrocknens nicht zu sehr heraustrete; wenn man das Austauschen vornimmt, so muß man die Wirkungen desselben sorgfältig mäßigen; überdem muß man die Wirkung der beyden ersten Pressungen gleichmäsig vertheilen; man hat gesehen, daß ohne diesen Umstand das Papier, welches ungleich, in der Mitte und an den Rändern, von Feuchtigkeit geschwängert war, Runzeln und Falten während des Abtrocknens bekommen hatte. Auch muß es bis auf einen gewissen Grad geleimt worden seyn. Wenn alle diese Bedingungen erfüllt werde, so werden die Züge der Kupferstiche sich nett eindrücken können, und zwar mit allen Farben, welche die ganzen und die halben Tinten erfordern.

Das weiche und hohle Papier aus Auvergne vereinigt ziemlich gut diese Vortheile; die Engländer und Holländer ziehen dieses Papier, so wie das Druckpapier, aus Frankreich. Man begreift jetzt sehr wohl, warum die Papiere dieser beyden Nationen, welche bloß ungefaulte Teige bearbeiten, nicht geschickt sind, die Wirkung des Kupferstichs anzunehmen. Ein frischer Teig, welcher der Wirkung der Kupferplatte nur sehr wenig nachgibt, liefert keinen Zug in der gehörigen Stärke."

Krünitz sums up the names of the various paper formats per country. Some formats are used especially for intaglio printing.

P. 839: "XI. Kurze Angabe verschiedner in- und außerhalb Deutschland übliche Papierarten, und der Papiermanufacturen oder Papiermühlen, wo sie verfertigt werden."
P. 840, division in paper formats: "1. in Royalpapier, welches wieder in Superroyal, das zu Landkarten und Kupferstichen dient, oder in ordinär Royal unterschieden wird."
"Druckpapier is das, welches man nicht oder doch nur schwach geleimt hat, das also durchschlägt, mithin bloß in den Druckereyen zu gebrauchen ist." [Thus not suited for writing.]
P. 846-848: names of several Dutch paperformats are given, no sizes.
P. 846: "Holland liefert fast unter allen Ländern des Erdboden das schönste Papier, obschon diese, seiner Brüchigkeit wegen, sich nicht gut zum Drucke brauchen läßt."
P. 848: [about French paper.]
P. 852: "Die größern Sorten sind Grand Iésus, große und kleine Lilien, Paternoster, Colombier, Grand Aigle, Dauphin, Soleil und Etoile. Alle diese haben den Nahmen von der Zeichen, die sie führen. Sie werden zu Kupferstichen, Landcharten, Handlungsbüchern, Planen, Abrissen und dergleichen Sachen mehr verbraucht. Grand Monde, ist die größte unter allen den vorgenannten."

> In: Johann Georg Krünitz, Oeconomische Encyclopädie, Th. 106 (1807).

1807, The Netherlands

An attempt to bring together a group of paper makers from the Zaanstreek on 10, 21 and 23 September 1807 is not succesful. They were supposed to be trained in making wove paper by an employee of Jan Kool for a certain fee.

"10 September 1807 komt den oude heer J. Kool bij mij (dhr. Van der Ley), berichtende dat deselve, zoals mij ook ten dele wel bekent was, grote kosten gemakat had tot verbetering van zijn fabriek, en bezonder tot het namaken van Engelsch papiervelin, doch dat hem nu daartoe eene gelegenheit was voorgekomen dewelke vrij zeker van veel belang, maar ook van vele kosten zoude wezen. Een persoon, in de fabrieken, zowel de onzen als de Engelsche en Fransche [taal], zoo kundig, dat het uit dien hoogde geen zwaarigheid maakte deselve bij ons in de fabriek te laten komen. Deze persoon had zich aangeboden alle onderrichtignen van de buitelandsche fabrieken ter verbetering van de onze te geven."

> Transcription in: Jane de Iongh, Van Gelder Zonen, 1784-1934, Haarlem 1934, p. 68.

"On 9th October 1807, the Dutch papermaker Jan Kool appeared before the notary Dirk Yff and told some fifteen of his colleagues how to make wove paper. The papermakers present had to pay a fee to Jan Kool and keep the manufacturing process a secret."

> Lit.: Richard L. Hills, Papermaking in Britain 1488-1988: a short history, [...] 1988, p. 78. After: E.G. Loeber, Paper mould and mouldmaker, [...] 1982, p. 23.

1809, England

Letter from Key, Dalton and Keys [KD&K], stationers [?], to William Balston, papermaker. KD&K put Balston under pressure to make his intaglio printing paper less blue and less smooth. Blue is added as a whitener. [Rumour has it that the addition of a blue colourant makes the paper stronger, but the present author has not found a reference to confirm this.]

"We are very sorry the Plate Elephant you lately send us is too blue and will not answer for the work ... We must beg of you to make us 5 Rms more of double Elephant Plate, and 8 Rms of Plate Elephant, not to be bluer than the enclosed piece, but the quality to be better if yo can, as it runs specky. Improving the quality will occasion colour to have rather a richer appearance, but it must not be the least brighter. We will beg of you to bring these round as soon as you can, in about 3 weeks or a month.

We think you had better let all our Plate Papers be of this exact colour, as we find the very bright colour generally objected to, and the rich cream colour always preferred.

It appears to us also that some of your Plate Papers have too smooth a surface, which gives it rather a hot-press feel. We should think Plate Papers ought not to have that feel; we should fear that it would not take the impression so well, and it certainly takes from the apparent substance.

We shall not be satisfied till you are completely at the very top, and we feel a confidence it will be in our power to introduce them [Balston's paper] to those channels to attain that desirable end, if seconded in a spirited and proper way by your attention and great judgement in the manufacturing part."

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 105-06. After: Maxted, The London Book Trades, 1977, p. VIII, XII, 84.

1810, England

Mezzotints are printed on French paper.

P. 471: "Four or five days before you think the plate will be ready for proving, notice must be given to the rolling-press printer to wet some French Paper, as no other will do for this work, and as that time is necessary for it to lie in wet".

> In: [John Dougal], The complete young man's companion ... [etc.], Manchester 1810; same text under: 1760-1770, England; 1783, England; 1785, England.

1810-1860, England

The illustrations in English artists manuals are printed on different kinds of paper, depending on their function.

"[Rudolph] Ackermann's drawing paper specimens are rare documents, but they are not unique. Others exist, if only by inference, for drawing paper may also be found in artists' manuals. Some of these had their illustrative plates, especially those which were to be hand-coloured, printed on it. The practice of printing on

drawing paper was discussed by Thomas Curson Hansard, in 1825, [Typographia, p. 597] and by Charles Tomlinson [Cyclopaedia, p. 369], who wrote in 1854, 'When plates are to be coloured, drawing paper is used, and is termed "hard-plate."' Tomlinson distinguished 'hard-plate' from 'soft-plate' which he defined as being 'the same size, weight, and quality as the drawing paper,' but differing from them 'in being soft and absorbent, the sizing being omitted in the manufacture.'

One such manual which used drawing paper for printing was Samuel Prout's Rudiments of Landscape [Rudiments, p. 11, 20], published by Ackermann in 1814. The reader was told, when copying the plates, to obtain 'paper of the same texture as the original drawings were made upon' where 'originals cannot be had recourse to, a reference to the prints' would serve the purpose. The paper which Prout suggested was 'rough cartridge' and the paper upon which some of the plate were printed was the same. Prout properly noted that it was available at the Repository [Ackermann's shop] and, indeed, it closely resembled Ackermann's white cartridge paper sample.

Hot pressed drawing paper can also be found in artists' manuals. The Art of Flower Painting, 1815, is an example [T. Clay, A series of progressive lessons intended to elucidate the art of flower painting in watercolours, London 1815]. The paper on which the hand-coloured plates were printed looks quite like Ackermann's 'wove vellum' drawing paper. The manual followed the recommendations of its day for using a glazed drawing paper for flower renderings. Aquatint ... Stipple engraving, and soft-ground etching and the crayon-manner were often used to imitate drawings; for these a soft plate paper, rather than a drawing paper, was often used to pick up the delicate detail form the printer's plate. Artist's manuals, therefore, might be composed of several different papers: printing paper for the text, plate paper for black and white plates and drawing paper for plates which were hand-coloured."

> Lit.: John Krill, English artist paper, Renaissance to Regency, London 1987, p. 136-138.

1815, The Netherlands

Wove paper is mainly used for book illustrations in the Netherlands now.

"In 1815 gebruikte de Nederlandse plaatdrukker vooral velijnpapier en het was bijzonder als hij terugviel op gevergeerd papier. De boekdrukker bleef dit nog wel gebruiken. Daarom treft men in boeken uit die tijd twee soorten papier aan: velijn voor de illustraties en vergé voor de tekst."

> Lit.: Ad Stijnman (et al. red.), De techniek van de Nederlandse boekillustratie in de 19e eeuw, Amstelveen 1995, p. 45.

1817, England

"Premium for the best account of the process employed in India [= China] in the manufacture of paper used in England for copper-plate printing, and known by the name of India paper, together with an account of the materials from which such paper is made."

> Lit.: John Krill, English artists paper, Regency to Empire, London 1987, p. 77. After: Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, vol. 35 (1817), p. 25.

1819, England

"Bank Notes must be printed on hard paper, that the ink may not run when they are signed; the paper must also be thin: it is the general opinion that a good impresion of a fine plate cannot be printed on such paper; in order to try the experiment, I had some impressions of my plate taken off on thin hard paper, and although the impressions were not so fine as those on India [= Chinese] or French paper, they were full as good as those on English paper, which is commonly used for book plates in respectable works."

> In: Richard Horsman Solly, "Mr. Solly's communication". In: Report of the committee of the Society of Arts, &c. together with the approved communications and evidence upon the same, relative to the mode of preventing the forgery of bank notes, London 1819, p. 51-52. Supplement to Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, vol. 36 (1819).

1820, United States of America

"In the issue of Niles" Weekly Register, January 22, 1820, an article gives some interesting details relative to papermaking in Pennsylvania and Delaware; these states 'pray that Congress will lay a duty of 25 cents per pound on all writing, printing, and copperplate papers, and 15 cents on all others.'"

> Lit.: Dard Hunter, Papermaking, the history and technique of an ancient craft, facsimile reprint New York 1978, p. 540. After: Niles' Weekly Register, January 22, 1820.

1820-1830 ca., England

"[William] Mathews [(1781?-1866)] seems to have experimented in printing. Examples of the calling-card views are also to be found on card, both glazed [= polished] and plain, as well as on blue and canary yellow papers. Other prints can be found on yellow card and laid on silver paper. Most of his views date from the 1820s and 1830s, when he lived in St Aldates. Possibly he had time to experiment, or could it be that he was trying to find new uses for his skills?"

> Lit.: Christopher Lennox-Boyd, "Two prints on velvet". In: Print quarterly, vol. 9 (1992) nr. 4 (Dec.), p. 89.

1821, England

"The use of fine and delicate engraving for Bank notes, has been objected to, in consequence of the difficulty of printing on such highly sized paper. But this objection is entirely got over by our method of printing in the water leaf [= unsized], and sizing after printing. This improvement has a triple advantage, – that of producing beautiful impressions, having on its surface, after printing, a better size, and preventing the ink from being so easily transferred."

> In: [Jacob] Perkins, [Gideon] Fairman, and [Charles] Heath, Siderographic process for multiplying copies of engravings, particularly with a view ot the prevention of forgery. In: Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, vol. 38 (1821), p. 51.

1825, England

"[Patent for] an improvement in machinery for making paper by employing a roller the cylindrical part of which is formed of "laid" wire. The effect produced by the said cylindrical roller is that of making an impression upon the sheet of paper, or pulp, upon which the said roller passes, & thus the paper so made has the appearance of "laid" paper" (like that manufactured by hand)."

> Lit.: Dard Hunter, Papermaking, the history and technique of an ancient craft, facsimile reprint New York 1978, p. 401, 541. After: John Phipps, Christopher Phipps, Patent of January 11, 1825.

1827, Germany

Engravings from transparent paper are best printed on dry wove paper.

"Die Abdrücke werden am besten auf ganz trockenem Velinpapier genommen."

> In: [...] Quenedy, "Anwendung des sogenannten Glas- oder Eispapiers". In: Der Handwerker und Künstler Fortschritte und Muster, vol. 2 (1827) nr. 41, p. 287.

1828, England

Patent to the name of the Englishman John George Christ ("communicated by a Foreigner") concerning manufacture and use of enamel paper for intaglio printing.

"A.D. 1827, February 14. – Nº 5463. The invention consists in 'putting a glazed or enamelled surface on paper to be used for copper and other plate printing by means of white lead and size, whereby the finer lines of the engraving are better exhibited than heretofore; and also in a mode of polishing the said enamel and the impression after it has been drawn from the plate.' The size is of parchment, isinglass and gum. It is mixed with the purest white lead in three different proportions, for the purpose of coating it three several times. Twenty-four hours after the impression it is 'placed with the impression downwards on a plate of finely-polished steel, and passed several times through the press with a strong pressure, which will give to the glazed or enamelled surface of the paper its last and highest polish.'"
[The editors are very satisfied with the quality of the impressions on paper prepared like that, but they comment that the lead white discolours fast due to the sulphurous gasses in the air in London and other cities. Apparently the inventor thought of that too, because papers are coated now with gypsum. The editors suggest baryte sulphate which would be even better, because it discolours even less and also does not affect colours handpainted to the paper. See also: 1836, Germany.]

> In: B. Woodcroft (comp.), Abridgments of specifications relating to printing ... [etc.], London 1859, facsimile reprint London 1969, p. 175. Also in: Patent granted to John George Christ, of Bishopsgate Street, London, for improvements in copper-plate and other printing, communicated by a Foreigner. In: Repertory of arts, manufactures and agriculture, vol. 6, third series (1828), p. 254-256; Repertory of arts and sciences, vol. 8, third series (1830?), p. 51; London journal of arts and sciences, vol. 1, second series (1828), p. 229-230; Register of arts and sciences, vol. 1, new series, p. 83; Engineers" and mechanics" encyclopaedia, vol. 1, p. 470; Patent journal, vol. 2, p. 582; Webster's reports, vol. 1, p. 83; Webster's patent law, p. 27, 47, 67, 88, 108, 132; Carpmael's reports on patent cases, vol. 1, p. 463; Russell's reports, vol. 5, p. 322.

1829, Germany

The invention of a machine for removing "knots" from the pulp.

"Der Papierfabrikant Leipold August Franke […] erfindet den Knotenfänger mit vertikalem, in der Stoffmasse rotierendem Zylinder. Letzterer war für die Handpapierherstellung erfunden, hat aber seit 1831 in England, Frankreich und Deutschland […] mehr und mehr in der maschinellen Papierproduktion Andwendung gefunden."

> Lit.: Wisso Weiß, Zeittafel zur Papiergeschichte, Leipzig 1983, p. 207.

1833-1838, England

In the ledgers of the plate printers Dixon & Ross in London – Ledger (B), 21/6/1833 to 11/10/1844 and Day Book, 5/11/1835 to 24/11/1838 various kinds and sizes of paper are mentioned. Follow the first references below.

"Ledger (B):
1833, 22 June: P.D.E.
1833, 29th June: Plate col.
1835, Oct. 24: Mock India
1836, Aug. 30: Imperial
1839, Jul. 3: Colombier
1839, Oct. 9: India."
"Day Book:
1835, Nov. 20th.: 2Dble. Elpht
1840, 16 Decr.: Enamel Cds".

> Lit.: Anthony Dyson, Pictures to print. The nineteenth-century engraving trade, London 1984, p. 175, 178, 185.

1834, Germany

About the qualities of intaglio printing paper; soft voluminous paper is preferred.

"Das tauglichste Papier aber darf weder zu hart noch zu weich, und muß mehr dick sein als dünn. Auf dem dünnen, ungeleimten Papiere, das man zum gewöhnlichen Bücherdruck verwendet, fallen die Abdrücke matt und schmutzig aus und werden in kurzer Zeit gelb, weil die flüssigen Theile der Druckerfarbe durchschlagen und sich zwischen den Strichen ausbreiten. Das zu sehr geleimte, harte Schreibpapier zieht die Farbe aus den feinen Strichen der Kupferplatte nur halb, oder gar nicht heraus, und die Abdrücke erhalten daher das Ansehen, als wären sie von einer schon stark genutzten platte abgezogen worden."

> In: Moritz Henrici, Die Kupferstecherkunst und der Stahlstich. Für Männer vom Fach und Kunstfreunde, Leipzig 1834, p. 62.

1834, England, France

France imports paper for intaglio printing from England nowadays.

"Frankreich, welches früher England mit Papier versah, muß gegenwärtig wenigstens jenes Papier, dessen es zu seinen Kupferstichen bedarf, aus England beziehen! (Dinglers Journal nach den Annales de Statistique. 1834. Nr. 12.)".

> In: "Statistische Notizen über die Papier-Fabrikation in England". In: Journal für Buchdruckerkunst, Schriftgießerei und die verwandten Fächer, vol. 2 (1835) nr. 5 (1 May), col. 76.

1835, Austria

Impositions on paper, among which is intaglio printing paper; "Xr" means Kreutzer.

"Post- und Velin-Papier, worunter auch sogenanntes ... Kupferdruckerpapier ... ohne Unterschied des Formats und der Benennungen: Einfuhr-Maßtab // 1 Centner netto // Zoll 7 Fl. 3 Xr. – Ausfuhr-Maßtab // 1 Centner netto // Zoll // Fl. – Xr. 6 1/4".

> In: "Zollverhältnisse. Oesterreichischer Kaiserstaat". In: Journal für Buchdruckerkunst, Schriftgießerei und die verwandten Fächer, vol. 2 (1835) nr. 5 (1 May), col. 77-78.

1836, Germany

"Kreidepapier" (enamel paper) for intaglio printing.

"Diese Karten dienen als Unterdruck zu Visiten-, Adres-Karten und Billets aller Art, in den verschiedensten Größen für Buch-, Kupfer- und Steindruckereien, so wie zum Verkaufe, zum Visiten- und Adreßkarten, Billets aller Art, so wie besonders um Namen der Gäste bei Tafeln darauf zu schreiben.

Dieselben sind mit der Liniirmaschine gearbeitet, reich verziert, auf gutes Kreidepapier gedruckt, in Päckchen von 50 Stück gebunden, mit Zwischenlagen von Seidenpapier versehen, und jede Nummer ist in schwarz, roth, grün und blau zu haben." [See also: 1828, England.]

> In: B. Dondorf, "Farbige Unterdruckkarte"'. In: Journal für Buchdruckerkunst, Schriftgießerei und die verwandte Fächer, vol. 3 (1836) nr. 10 (31 Oct.), col. 159.

1836, Germany

The plate printer G.G. Lang in Darmstadt supplies Chinese paper and intaglio printing paper from Baden.

"Zur Bequemlichkeit der mich damit Beauftragenden, erbiete ich mich [...] das Kupferdruckpapier und wenn es gewünscht wird, auch das schöne jetzt so sehr beliebte gebleichte chinesische Papier zu besorgen.

Das Kupferdruckpapier in jeder Größe und Qualität hat man hier gute und wohlfeile Gelegenheit aus den nahgelegenen rühmlichst bekannten Badischen Papierfabriken zollfrei zu beziehen".

> In: Gustav Georg Lang, "Circulare". In: Journal für Buchdruckerkunst, Schriftgießerei und die verwandte Fächer, vol. 3 (1836) nr. 11 (30 Nov.), col. 174.

1837, Germany

Discusses the qualities of intaglio printing paper. The best kinds of paper come from England and France, seldom from Germany. Bleaching with chlorine is considered to facilitate degradation of the paper; compare with: 1837, France.

"Außer der genauen Kenntniß der nöthigen Oele und der sorgsamen Zubereitung seiner Firnisse und Farben hat der Drucker seine besondere Aufmerksamkeit auf das für die vorhabende Platte jedesmal passendste Papier zu richten, an dem die Gleichheit, die reine Weiße, die Bindung des Stoffes, ohne zu viel Leim zu haben, so wie dessen Reinheit von allen Knötchen, Sandkörnchen, Flecken und dergleichen zu beobachten ist. Nur wenige Papierfabriken haben wir bis jetzt in Deutschland, welche trotz des großen Bedarfs und Nachfrage den englischen und französischen Papieren zu diesem Zwecke in ihrem Fabrikat nur nahe kämen. Auch ist die Anwendung des Chlors zum Bleichen, da man sich in den Fabriken selten genugsam bemüht, ihn durch wiederholtes Durchwässern des Papiers wieder heraus zu waschen, eine äußerst schädliche Sache, da dadurch das Papier leicht bricht und später fast zerfällt."

> In: Carl Barth, Die Kupferstecherei, oder die Kunst in Kupfer zu stechen und zu äzen; J. Longhi, I. theoretischer Theil, übersetzt von C. Barth; C. Barth, II. praktischer Theil, Hildburghausen & Meiningen, 1837, p. 172-173.

1837, Germany

The plate printer C. Susemihl in Darmstadt supplies intaglio printing paper and Chinese paper.

"[...] das Köllner Pfund desselben, bester Qualität, kostet dermalen Kr. 40"; „Chinesisches Papier, in der bekannten Bogengröße, das Buch [24 leaves] Fl. 7 rheinländisch"

> In: C. Susemihl, "Circulare". In: Journal für Buchdruckerkunst, Schriftgießerei und die verwandte Fächer, vol. 4 (1837) nr. 2 (28 Feb.), col. 26-27.

1837, France

Detailed information on the qualities of intaglio printing papers. On the choice of white paper, which can be made whiter optically by adding a blue colourant to the pulp. The English plate printers use a very fine paper. The English paper is made by couching two layers of pulp on top of each other, the lower layer is normal and on top of that comes a very fine pulp. Laid and wove are known. Mechanically produced paper is of lesser quality, but cheaper. The qualities of China paper are described, it is occasionally bleached with chlorine in the past few years. Various kinds of French paper are used by French plate printers, the best kinds are not bleached with chlorine; compare with: 1837, Germany. Enamel paper ("papier glacé") is used for visiting cards etc. Foxed paper may be bleached with chlorine before printing. Sometimes prints are sized after printing.

> In: [...] Berthiaud, Pierre Boitard [ed.], Nouveau manuel complet de l'imprimeur en taille douce, Paris 1837, p. 136-172.

1840, France

"In 1840, M. de Bergue suggested the employment of sand-traps on the paper-machine, which, as the name implies, removed sand, gravel, and heavy particles of dirt from the pulp, which previously had ruined type, copperplates, etc., when printed upon the paper."

> Lit.: Dard Hunter, Papermaking, the history and technique of an ancient craft, facsimile reprint New York 1978, p. 542.

1841, England

Chinese paper for intaglio printing; its appearance, formats and qualities.

"India Paper. This paper, which comes to us from China, is decidedly superior to any other paper for obtaining fine impressions from engravings. That which is used as the linings of tea chests is equal in quality to any, although some of it is coarse, and many persons object to the colour; a thicker and whither sort comes over as wrappers for silk; both these sorts are injured by having been used as packages, but out of them good pieces may be selected, sufficiently large for octavo pages, and frequently for quarto. A perfect paper of a large size is imported in chests of two thousand sheets each. A sheet measures four feet three inches and one tenth in length, and two feet one inch and one tenth in width. This paper varies very much in quality, so that circumspection should be used in making a purchase.

All India paper contains particles of hard matter, like minute portions of stone, small pieces of the hard stalks of some vegetable, and lumps of the material from which it is made. [...]

There is a smooth side and a rough side in white India paper, called by printers the right side and the wrong side: this India paper has the appearance of having been formed on a smooth surface of metal or stone, by being laid on with a brush, the rough side having the semblance of paint applied by an unskilful hand, exhibiting all the marks of the brush in irregular directions; the other side being flat and smooth. The smooth side is always used for the impression."

> In: William Savage, Dictionary of the art of printing, London 1841, p. 416. Photomechanical reprint: New York 1965.

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Author

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