

The Paper Trade in Early Modern Europe

Practices, Materials, Networks

Edited by

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The Paper Supply of a Printing House as a Mirror of the Paper Trade in the Early Modern Low Countries: The Case of Dirk Martens' Workshop

Renaud Adam

1 Introduction¹

Paper was essential in the economy of the book during the hand-press period. A hand press working full-time consumed about three reams of paper per day.² It represents about one third or one half of the daily production of a paper mill, estimated around an average of 800.000–900.000 sheets per year and mould as Gerhard Piccard argued for fifteenth- and sixteenth-century Europe.³ It is thus quite significant that Frédéric Barbier uses the analogy 'paper valley' to rename the Middle Rhine Valley, birthplace of print technology.⁴

Therefore, studying the paper supply of printing houses cannot be neglected for anyone who wants to understand all the aspects of the book industry. Indeed, as Daniel Bellingradt reminds us in one of his articles dedicated to the paper trade: "the trade of paper was part and basis of both the printing and publishing culture and the book trade of early modern Europe".⁵ However, until very recently, historians of the early modern book have not paid much attention to the paper trade and to the supplying function of this trade to printing houses. Within scholarship on early print, the paper industry has been mainly examined from a bibliographical angle. For example, Gaskell's

1 The author would like to thank Dr. Susie Speakman Sutch (Berkeley, USA) for the re-reading of this chapter, and the editors for their comments and suggestions.

2 Jeanne Veyrin-Forner, 'Fabriquer un livre au XVI^e siècle', in Henri-Jean Martin (ed.), *Histoire de l'édition française* (4 vols., Paris: Promodis, 1982–1986), I, 280.

3 Gerhard Piccard, 'Die Wasserzeichenforschung als historische Hilfswissenschaft', *Archivalische Zeitschrift*, 52 (1956), p. 73; Gerhard Piccard, 'Papierherzeugung und Buchdruck in Basel bis zum Beginn des 16. Jahrhunderts. Ein wirtschaftsgeschichtlicher Beitrag', *Börsenblatt für den deutschen Buchhandel*, Frankfurter Ausgabe, 76 (1966), p. 1826.

4 Frédéric Barbier, *L'Europe de Gutenberg. Le livre et l'invention de la modernité occidentale* (Paris: Belin, 2006), pp. 192–195.

5 Daniel Bellingradt, 'Trading Paper in Early Modern Europe. On Distribution Logistics, Traders, and Trade Volumes between Amsterdam and Hamburg in the Mid-Late Eighteenth Century', *Jaarboek voor Nederlandse Boekgeschiedenis*, 21 (2014), p. 117.

renowned *New Introduction to Bibliography* contains only a few lines dedicated to the origin of the paper used by English printers in its chapter soberly entitled 'Paper', and none on the selling of paper to printers.⁶ As with Gaskell's *New Introduction*, scholars have largely focused on the material characteristics of paper or its manufacture. The study of paper, however, can yield important evidence. It can, for instance, contribute to a better understanding of the workings of a press, or enable us to determine the number of presses running in a printing house. A cross study of quire structures and watermark locations, for instance, enabled me to determine that at least two presses were running in the first printing houses of Alost and Louvain (1473–1474).⁷ Identification of paper stocks through the examination of watermarks, furthermore, can allow us to date, within a range of years rather than decades, previously undated editions. This approach is very useful particularly in relation to the Low Countries, where only around 800 of the approximately 2000 fifteenth-century editions printed on paper have been dated. Gerard van Thienen's research on the books printed by the Brethren of the Common Life in Brussels (1475–1485) allowed him to refine the date of their editions.⁸ This kind of research, like typographical scholarship, is certainly worth the effort. Watermarks also helped bibliographers to locate the printers of incunabula that lack a colophon, as Alan Stevenson demonstrated for the first book printed in Louvain circa 1474.⁹ But, as we see, despite the importance of this economic sector, nothing has been published on the purchase of paper by fifteenth-century printers from the Low Countries or on the 'paper roads' used for supplying them.¹⁰ This significant

6 Philip Gaskell, *A New Introduction to Bibliography*, 2nd ed., (Oxford: The Clarendon Press, 1974), p. 60.

7 Renaud Adam, *Vivre et imprimer dans les Pays-Bas méridionaux (des origines à la Réforme)* (2 vols., Turnhout: Brepols, 2018), I, 78–79. The Hellingas and Gerard van Thienen came to the same conclusions with an identical method for the first workshops of Bruges and Brussels. See Lotte and Wytze Hellinga, 'Caxton in the Low Countries', *Journal of the Printing Historical Society*, 11 (1976), pp. 20–22; Gerard van Thienen, 'Papieronderzoek en de drukpers van de Broeders des gemenen levens in Brussel (1475–1485)', in Chris Coppens (ed.), *E codicibus impressisque. Opstellen over het boek in de Lage Landen voor Elly Cockx-Indestege* (3 vols., Leuven: Peeters, 2004), I, 431–443.

8 Van Thienen, 'Papieronderzoek', pp. 431–443.

9 Allan Stevenson, 'The First Book Printed at Louvain', in Dennis E. Rhodes (ed.), *Essays in Honour of Victor Scholderer* (Mainz: Pressler, 1970), pp. 402–406. I also used the analysis of watermarks to locate the binding workshop of Felix de Hont in Louvain active in the 1470s. See Renaud Adam, 'Deux découvertes à la Bibliothèque royale de Belgique: une pronostication inconnue imprimée à Anvers en 1498 et un second "relieur au rébus" (Louvain, dernier tiers du XV^e siècle)', *Gutenberg Jahrbuch*, 87 (2012), pp. 157–164.

10 Leon Voet gives some details on the purchase of paper made by the *Officina Plantiniana* and the names of its suppliers. Paper was mainly delivered from France, Germany, and

historiographical gap can be explained by the lack of data and in-depth research on this topic. My study of Dirk Marten's printing house will go some way to filling in this gap.¹¹ With regard to this volume and its focus on the practices, materials, and networks of the early modern paper trade in Europe, my chosen case study of Marten's printing house sheds light on the material supply of paper to print shops; on the business practices of the participating paper traders; and on the networks of these paper flows from the mills, to warehouses, to the printing shops.

In 1473, Martens founded with his *socius* ('associate') Johannes de Westphalia the first printing house of the Southern Low Countries in his hometown of Alost. Martens ended his career in 1529 after publishing some 270 books.¹² He died five years later on 28 May 1534. He is of great importance for the history of the spread of the art of printing in the Southern Low Countries. He introduced the use of three alphabets (Greek, Hebrew and italic) and generalized the use of roman types. He also printed the first novel by an Italian humanist in the Low Countries – Aenas Silvius Piccolomini's *De duobus amantibus* in 1473¹³ – and was close to Erasmus and the humanist networks of the Low Countries. The Alost printer is also known as the first editor of one of the most important philosophical works written during the Early Modern Period: Thomas More's *Utopia* (1516).¹⁴

2 Paper Supply of Dirk Martens' Printing House

Studying the supply of paper for a printing house should not be neglected by scholars because it had great repercussions for the price of a book. Leon Voet showed that, in the *Officina Plantiniana*, it accounted for an average of 60 to

from the domestic market. At the end of the seventeenth century, the paper manufactured in the Dutch Republic had largely replaced the French. See Leon Voet, *The Golden Compasses. A History and Evaluation of the Printing and Publishing Activities of the Officina Plantiniana at Antwerp* (2 vols., Amsterdam: Vangendt, London: Routledge & Kegan Paul, New York: Abner Schram, 1969–1972) II. 25–35.

- 11 On this printer see Anne Rouzet, *Dictionnaire des imprimeurs, libraires et éditeurs belges des XV^e et XVI^e siècles dans les limites géographiques de la Belgique actuelle* (Nieuwkoop: De Graaf, 1975), pp. 140–143; Renaud Adam and Alexandre Vanautgaerden, *Thierry Martens et la figure de l'imprimeur humaniste (une nouvelle biographie)* (Turnhout: Brepols, Paris: Bibliothèque Sainte-Geneviève, Bruxelles: Musée de la Maison d'Erasmus, 2009); Adam, *Vivre et imprimer*, II. 175–176 (and I–II. passim).
- 12 A list is available in Adam and Vanautgaerden, *Thierry Martens*, pp. 200–234.
- 13 ISTC ip00671700; USTC 435207.
- 14 USTC 400360.

65 per cent of the cost of producing a book, this percentage rising to 75 per cent for some large editions.¹⁵ Its price fluctuated and could vary from year to year. Printers were very careful about this and the *Officina Plantiniana's* extant accounts show that books were recorded according to the number of sheets used in their composition.¹⁶ The number of sheets was used for the calculation of the cost of production and for fixing the selling price. These archives teach us that the paper supply for a printing house like the *Officina Plantiniana* was enormous. Jan Moretus I needed, between 1590 and 1610, no fewer than 24,500 sheets of paper to print one copy of the approximately 700 editions that bear his name, which represents around 46,550 reams of paper to print all these books.¹⁷ The sheet of paper was also the basic unit of the daily wages of the workers. Pressmen were paid on the basis of the sheets that they pressed. The norm was fixed at 1,250 sheets per day, excluding wastage.¹⁸ The printed sheet was thus an important economic entity in a printing house during the period of hand-operated presses.

Reconstructing the business of the paper trade in the early modern Low Countries was not easy because there is little existing scholarship on the subject. I carried out interdisciplinary research into the trade, combining a bibliographical approach with an archival survey. I decided to study two books printed by Martens. The first dates to the year 1474, at the very beginning of the typographic era of the Low Countries. It is a quarto edition of the *Logica vetus* by Aristotle.¹⁹ The second book was printed more than fifteen years later when the second generation of printers of the Low Countries arose. It is a 1490 folio edition of Angelus de Clavasio's *Summa angelica de casibus conscientiae*.²⁰ Identifying the watermarks of the paper used to print these two books helped me discover where Martens obtained his paper supplies. My investigation relied on three well-known tools: Briquet's *Filigranes*, Piccard's *Wasserzeichenkartei*, and Gerard van Thienen's *Watermarks in Incunabula printed in the Low* (WILC),

15 Voet, *The Golden Compasses*, II. 19 (see also pp. 379–385). On the pricing policy of the Plantin-Moretus firm in the Early Modern Period see Goran Proot, 'The Pricing Policy of the Officina Plantiniana, 1580–1655', in Dirk Imhof etc., *Balthasar Moretus and the Passion of Publishing* (Antwerp: Museum Plantin-Moretus, 2018), pp. 32–44.

16 Voet, *The Golden Compasses*, II. 20.

17 Dirk Imhof, *Jan Moretus and the Continuation of the Plantin Press. A Bibliography of the Works Published and Printed by Jan Moretus I in Antwerp (1589–1610)* (2 vols., Leiden: Brill, 't Goy-Houten: Hes & de Graaf 2014), I. XLI–XLII.

18 Voet, *The Golden Compasses*, II. 325–326.

19 ISTC ia01014400; USTC 435221.

20 ISTC ia00720000, USTC 436014. A digital copy of the copy housed at the Library of Ghent University is available through this link: <https://books.google.be/books?vid=GENT900000176872> (accessed on 02 April 2020).

a digital library of watermarks used by fifteenth-century printers of the Low Countries hosted by the National Library of the Netherlands.²¹ I limited this survey to fifteenth-century books because the tools available for the following century are not exhaustive enough. Before discussing the routes taken by paper from paper mills to merchants and then to Dirk Martens, a brief detour on the paper trade in the Low Countries will be necessary to have a full picture of this economic sector.

The *Logica vetus* is the fourth book printed by Martens and Westphalia. It was issued on 4 May 1474 in Alost, located halfway between Brussels and Ghent and about 60 kilometres from the University of Louvain. This quarto edition contains 62 folios, which means that 15 and a half sheets of paper were used to print one copy of this book. The average print run for an edition printed in the 1470s was in the vicinity of 275 to 300 copies.²² This means that, in total, the impression of the *Logica vetus* required around 4,500 sheets of paper, which is the equivalent of nine reams of paper. The *Logica vetus* also has the particularity of having been printed on half-sheets. It is in fact a primitive method of production where quarto editions are treated as small folio editions. This technique not only characterized the operation of Martens' printing house, it was also a common practice in many European workshops during the same period.²³

21 Charles-Moïse Briquet, *Les Filigranes. Dictionnaire historique des marques du papier dès leur apparition vers 1282 jusqu'en 1600*, 2nd ed., (4 vols., Leipzig: Karl W. Hiersemann, 1923), online version: http://www.ksbm.oeaw.ac.at/_scripts/php/BR.php; Gerhard Piccard, *Die Wasserzeichenkartei Piccard im Hauptstaatsarchiv Stuttgart* (17 vols., Stuttgart: Kohlhammer, 1961–1997), online version: <https://www.piccard-online.de>; WILC = Gerard van Thienen, *Watermarks in Incunabula printed in the Low Countries*, <http://watermark.kb.nl>.

22 One can find an overview of fifteenth-century print runs with a useful introduction in Eric White's *A Census of Print Runs for Fifteenth-Century Books*, published on the CERL website https://www.cerl.org/resources/links_to_other_resources/bibliographical_data#researching_print_runs (accessed on 02 April 2020). See also Konard Haebler, *The Study of Incunabula* (New York: The Grolier Club, 1933), pp. 171–175; Rudolf Hirsch, *Printing, Selling and Reading 1450–1550* (Wiesbaden: Harrassowitz, 1967), pp. 61–77; Lucien Febvre, Henri-Jean Martin, *L'apparition du livre*, 3rd ed. (Paris: Albin Michel, 1999), pp. 307–309; Angela Nuovo, *The Book Trade in the Italian Renaissance* (Leiden: Brill, 2013), pp. 99–116; Adam, *Vivre et imprimer*, 1. 110–112.

23 Lotte Hellinga, 'Press and Text in the First Decades of Printing', in Lotte Hellinga, *Texts in Transit. Manuscript to Proof and Print in the Fifteenth Century* (Leiden: Brill, 2014), pp. 8–36.

I worked on the only complete, extant copy housed at the Royal Library of Belgium in Brussels.²⁴ The watermarks teach us that this book was printed with ten different sorts of paper.²⁵ I have grouped them into five families within which some variants appear: a bull's head with a cross and a curved muzzle; a Gothic letter P surmounted by a quatrefoil; another Gothic letter P surmounted by a trefoil and beneath, a cross; a shield with 'lile' in Gothic letters; another shield with three lilies surmounted by a crown and beneath, a Gothic letter T.²⁶ The book was printed on Chancery paper (ca. 32×45 cm).²⁷

- 24 Brussels, Royal Library of Belgium, Inc A 2.343. A digital copy can be found at: <http://uurl.kbr.be/1065321> (accessed on 02 April 2020). I published a facsimile version, accompanied by a study of the first workshop of Martens and Westphalia in Alost, in Renaud Adam, *Jean de Westphalie et Thierry Martens. La découverte de la Logica Vetus (1474) et les débuts de l'imprimerie dans les Pays-Bas méridionaux (avec un fac-similé)* (Turnhout: Brepols, 2009). Paul Needham was the first to study the fragments of 8 leaves of this edition discovered at the beginning of 1980s. See Paul Needham, 'Fragments of an Unrecorded Edition of the First Alost Press', *Quaerendo. A Quarterly Journal from the Low Countries devoted to Manuscripts and Printed Books*, 12 (1982), pp. 6–21.
- 25 This was unusual at that time. The phenomenon is also found in other workshops. The only preserved copy of the second edition of the *Logica Vetus* printed in Louvain by Conrad Braem (1475) was made using 14 different papers (1STC ia01014500; USTC 435255; The Hague, National Library of the Netherlands, 169 G 30). See Adam, *Jean de Westphalie et Thierry Martens*, p. 45.
- 26 List of watermarks with references to WILC (WM), Briquet, and Piccard (P); the type of paper; the location of production and the dates of circulation [when it is known]: 1.1. *Bull's head, cross, curved muzzle*: WM I 59159; Briquet 14179; Chancery; Eastern France (Champagne, Troyes) (1442–1450). 1.2. *Bull's head, cross, curved muzzle*: WM I 59161; Briquet 14179; Chancery; Eastern France (Champagne, Troyes) (1442–1450). 1.3. *Bull's head, cross, curved muzzle*: WM I 59158; Briquet 14182; Chancery; Eastern France (Champagne, Troyes) (1453–1461). 1.4. *Bull's head, cross, curved muzzle*: WM I 59160; Briquet 14182; Chancery; Eastern France (Champagne, Troyes) (1453–1461). 1.5. *Bull's head, cross, curved muzzle*: WM I 59157; P11/IX.8; Chancery; Eastern France (Champagne, Troyes) (1451–1459). 2.1. *Letter p, quatrefoil, to right*: WM I 52789; Briquet 8687; Chancery; Eastern France (Lorraine, Burgundy, Upper Rhine) (1470–1472). 2.2. *Letter p, quatrefoil, to right*: WM I 52790; Briquet 8687; Chancery; Eastern France (Lorraine, Burgundy, Upper Rhine) (1468–1471). 3. *Shield, crosier to left, letters 'lile'*: WM I 52848; Briquet 1885; Chancery; Eastern France (Bourgogne, Bar-le-Duc [Lisle-en-Rigault]) (1469–1473). 4. *Shield, three lilies, crown, on t to right*: WM I 52848; P X111/111.1560; Chancery; Northeast France (1455–1463). 5. *Letter p, trefoil, cross, to left*: WM I 59166; Briquet 8789; Chancery; Eastern France (Lorraine, Burgundy, Upper Rhine) (1474–1476).
- 27 During the fifteenth and sixteenth centuries, three other sizes were available for typographers: Imperial (ca. 49×74 cm), Royal (ca. 43×62 cm), and Median (ca. 35×51 cm). The Chancery paper was commonly used by fifteenth-century printers of the Low Countries. There are only three editions printed on Median paper and 12 on Royal paper. See Paul Needham, '1STC as Tool for Analytical Bibliography', in Lotte Hellinga and John Goldfinch (eds.), *Bibliography and the Study of 15th-Century Civilisation. Papers presented at a*

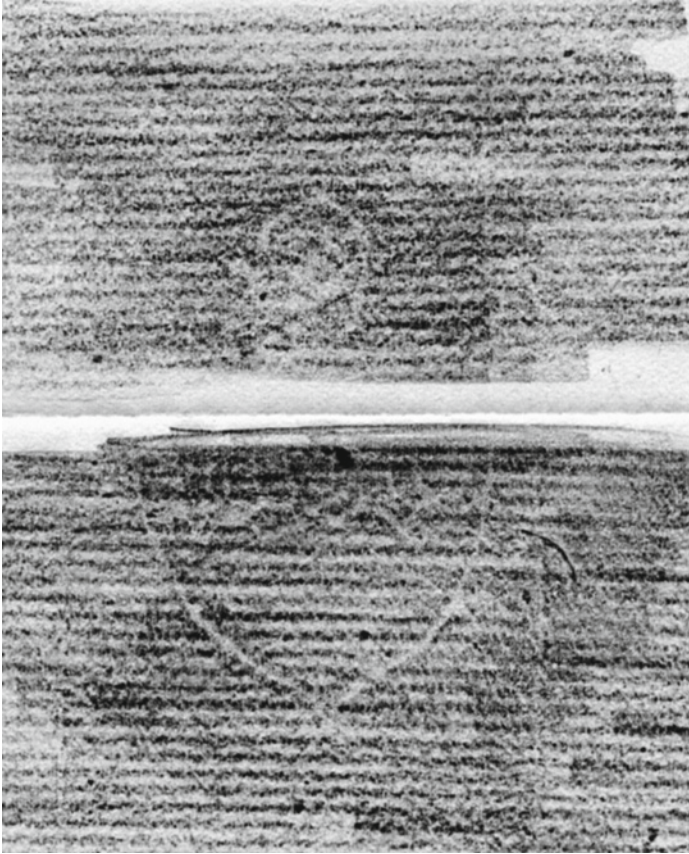


FIGURE 4.1 Watermark: *Shield, crozier to left, letters 'lil'* [Aristotle, *Logica vetus* (Alost: Johannes de Westfalia and Dirk Martens, 4 May 1474), fols. 1–10; Royal Library of Belgium, Inc A 2.343]

Most of the sheets of paper used for the composition of the *Logica Vetus* are contemporary with the printing. There is also paper that had already been in circulation during the years 1440–1450. The paper supplies come mainly from Eastern France, from Champagne, Burgundy and Lorraine. These regions are

Colloquium at the British Library 26–28 September 1984 (London: British Library, 1987), pp. 41–47; Paul Needham, 'Res papirae: Sizes and Formats of the Late Medieval Book', in Peter Rück (ed.), *Rationalisierung der Buchherstellung im Mittelalter und in der frühen Neuzeit. Ergebnisse eines buchgeschichtlichen Seminars, Wolfenbüttel 12–14 November 1990* (Marburg: Institut für Historische Hilfswissenschaften, 1994), pp. 123–145; Gerard van Thienen, 'Paper (including Production, Watermarks, Paper Trade)', in Marieke van Delft and Clement de Wolf (eds.), *Bibliopolis. History of the Printed Book in the Netherlands* (The Hague: Koninklijke Bibliotheek, Zwolle: Waanders, 2003), p. 18.

well known for their many paper mills. It was even possible to locate the production of some paper to Troyes and Lisle-en-Rigault near Bar-le-Duc.

The second book is thicker than the first one. Angelus de Clavasio's *Summa angelica de casibus conscientiae* is a 1490 folio edition, which contains 334 folios.²⁸ Martens printed it with Chancery paper in Alost. At the end of the fifteenth century, print runs generally did not exceed 1,000 copies.²⁹ Hence, as one copy of this edition requires 83.5 sheets of paper, and if 1,000 copies were to be printed, the total needed is 83,500 sheets, which represents 167 reams of paper. The copy studied is housed at the National Library of the Netherlands in The Hague.³⁰ Its watermarks indicate that Martens printed it with 19 different sorts of paper. As with the *Logica vetus*, I have grouped them into eight families within which some variants appear: a goblet; a heart surmounted by a crown and beneath, the letters Ib; a heart surmounted by a Latin cross; a Gothic letter P; another Gothic letter P with a wide dash; a large pot with a double line ear; a shield with a sun and surmounted by a crown; and a small tower.³¹ As with the *Logica vetus*, Martens purchased his paper mainly from Eastern France in Champagne and Lorraine. One paper merchant could be identified by the

28 ISTC ia00720000; USTC 436014. A digital copy can be found at: <https://books.google.be/books?vid=GENT900000176872> (accessed on 02 April 2020).

29 White, *A Census of Print Runs for Fifteenth-Century Books*, passim; Adam, *Vivre et imprimer*, I, 110–112.

30 The Hague, National Library of the Netherlands, 168 E 34.

31 1. *Goblet*: WM I 00710; Briquet 4585–4589; Chancery; France (1468?–1492). 2. *Heart, crown, letters Ib*: WM I 00708; Briquet 4324; Chancery; Eastern France (Champagne, Troyes) (1482). 3.1. *Heart, Latin cross*: WM I 00477; Briquet 4233; Chancery (1491). 3.2. *Heart, Latin cross*: WM I 00478; Briquet 4233; Chancery; Eastern France (Champagne, Lorraine) (1491). 3.3. *Heart, Latin cross*: WM I 00707; Briquet 4233; Chancery; Eastern France (Champagne, Lorraine) (1491). 3.4. *Heart, Latin cross*: WM I 00712; Briquet 4233; Chancery; Eastern France (Champagne, Lorraine) (1491). 3.5. *Heart, Latin cross*: WM I 61720; Briquet 4233; Chancery; Eastern France (Champagne, Lorraine) (1491). 4.1. *Letter p to right*: WM I 00473; Chancery; Eastern France (Lorraine, Burgundy; Upper Rhine). 4.2. *Letter p to right*: WM I 00475; Chancery; Eastern France (Lorraine, Burgundy; Upper Rhine). 4.3. *Letter p, wide dash, to right*: WM I 00474; Chancery; Eastern France (Lorraine, Burgundy; Upper Rhine). 4.4. *Letter p, wide dash, to right*: WM I 00709; PIV/IV.421 (1493); Chancery; Eastern France (Lorraine, Burgundy; Upper Rhine) (1493). 5.1. *Pot, large, double line ear left*: WM I 00711; Briquet 12480; Chancery; Eastern France (Champagne) (1491). 5.2. *Pot, large, double line ear right*: WM I 00476; Briquet 12480; Chancery; Eastern France (Champagne) (1491). 5.3. *Pot, large, double line ear right*: WM I 00479; Briquet 12480; Chancery; Eastern France (Champagne) (1491). 6.1. *Shield, sun, crown*: WM I 00713; Briquet 13977; Chancery; France (1487). 6.2. *Shield, sun, crown*: WM I 00865; Briquet 13977; Chancery France (1487). 7. *Sun, circle*: WM I 00472; Briquet 13929; Chancery; France (1486). 8.1. *Tower, small*: WM I 00866; Chancery; ?. 8.2. *Tower, small, trefoil*: WM I 00714; Briquet 15900; Chancery; Eastern France (Vosges) (1491).



FIGURE 4.2

Watermark: *Heart, crown, letters Ib* [Angelus de Clavasio, *Summa angelica de casibus conscientiae* (Alost: Dirk Martens, 4 July 1490), fol. 7; The Hague, National Library of the Netherlands, 168 E 34]

SOURCE: [HTTP://WATERMARK.KB.NL/SEARCH/VIEW/ID/00708](http://watermark.kb.nl/search/view/id/00708)

paper's watermarks: the letters Ib placed beneath the heart surmounted by a crown refer to the papermaker Jean Le Ber II, the Younger, from Troyes.³²

Le Ber died circa 1488, two years before the printing of the *Summa angelica*. This illustrates that printers did not always immediately use the paper they bought. They held reserves that could keep the business going in times of emergency. The other sorts of paper are contemporary with the printing.

The paper used by Martens can also be found in books printed by his colleagues in other towns. For example, in Louvain, Aristotle's *Physica* issued by Conrad Bream circa 1475 contains paper with a bull's head with a cross and a curved muzzle also present in the *Logica vetus*.³³ Similar paper used for the Clavasio's *Summa angelica* – that with a goblet as watermark – was used in

32 Louis Le Clert, *Le papier. Recherches et notes pour servir à l'histoire du papier, principalement à Troyes et aux environs depuis le quatorzième siècle* (2 vols., Paris: A l'enseigne du Pégase, 1926), II. 357–358; Briquet, *Filigraanes*, II. 260.

33 WM I 59159. Reference of the edition: ISTC ia01020000; USTC 435256.

the composition of other books printed in Antwerp, Delft, Deventer, and Liège during the same period.³⁴

3 The Paper in the Low Countries

As we can see, the mills of the Low Countries did not produce sufficient paper to cover the needs of local printing houses. The oldest paper mill in this territory dated back to the late fourteenth century. It was located in Houpelines near Lille (county of Flanders) and was founded in 1389.³⁵ After that, paper mills multiplied primarily in Brabant, in the vicinity of Brussels, where the administration of the Duchy was centred. The oldest, established in Linkebeek, was granted by the Duke Philip the Good in 1439.³⁶ Inge Van Wegens has identified no fewer than 18 paper mills in the area around Brussels, all founded in the second half of the fifteenth century. The centre of gravity for this production was located in the valley of the Woluwe to the southeast of Brussels. The production techniques seem to have been imported from France.³⁷

During the fifteenth century, as was the case for Dirk Martens, printers imported the majority of their paper from Eastern France: Alsace, Burgundy, Lorraine, Vosges, and Champagne with Troyes as its most important centre.³⁸ It seems that this situation was maintained at the beginning of the sixteenth century. The examination of the paper of a copy of a book printed by Henrick

34 Examples: WM I 02390 in Antwerp: Claes Leeu, 20 November 1488 (ISTC il00355000; USTC 435971); WM I 51136 in Delft: Christiaen Snellaert, 29 March 1490 (ISTC ic00978600; USTC 438312); WM I 53196 in Deventer: Richardus Pafraet, [between 12 March 1492 and 6 June 1500] (ISTC ia00445530; USTC 438496); WM I 60033 in Liège: Cornelius de Delft, [after 1499] (ISTC is00470400; not recorded in USTC). For more results see <http://watermark.kb.nl/search/list/> (accessed on 8 April 2019).

35 Maurice-A. Arnould, 'Quand sont apparus les premiers moulins à papier dans les anciens Pays-Bas?', in *Villes d'imprimerie et moulins à papier du XIV^e au XVI^e siècle. Aspects économiques et sociaux* (Brussels: Crédit communal de Belgique, 1976), pp. 269–273; Inge Van Wegens, 'Paper Consumption and the Foundation of the First Paper Mills in the Low Countries, 13th–15th Century. A status quaestionis', in Carla Meyer, Sandra Schultz, and Bernd Schneidmüller (eds.), *Papier im mittelalterlichen Europa: Herstellung und Gebrauch* (Berlin: De Gruyter, 2015), pp. 77–78.

36 Van Wegens, 'Paper Consumption', pp. 78–80.

37 Van Wegens, 'Paper Consumption', pp. 84–85.

38 Van Thienen, 'Paper (including Production, Watermarks, Paper Trade)', p. 18. On these centres of production see Le Clert, *Le papier*, passim; Jean-Marie Janot, *Les moulins à papier de la région vosgienne* (2 vols., Nancy: Berger-Levrault, 1952); Maria Zaar-Görgens, *Champagne – Bar – Lothringen. Papierproduktion und Papierabsatz vom 14. bis zum Ende des 16. Jahrhunderts* (Trier: Porta-Alba-Verlag, 2004).

Eckert in 1512/13 in Antwerp and that of another edition published by Dirk Martens in 1511/12 reveals that these books were made with paper from the Troyes region and from mills located in Burgundy, Champagne and Lorraine.³⁹

There were, however, a few exceptions. For example, William Caxton printed his French translation of Jacobus de Cessolis' *Play of chess* (Bruges, 1474) with paper that came from Basel.⁴⁰ Paper manufactured in Germany or Italy was also available. Italian paper was in circulation from the beginning of the fourteenth century. The oldest paper used in Bruges, Mons, Tournai or Malines came from the Italian Peninsula.⁴¹ The paper could be shipped by sea. The sending of 11 bales of paper to Bruges by a Florentine merchant in 1370 is recorded in the notarial archives of Genoa.⁴² Italian paper could also transit through the Rhine Valley. Cologne was certainly the main point of entry for this sort of paper. The municipal archives of Antwerp preserve traces of commercial exchanges between merchants from Antwerp and Cologne at the end of the fifteenth century. For example, Jan van Hackenbroek, a citizen of Cologne, claims that two packets and a half of paper, which the valet Jan Buys transported to Cologne, belong to him (22 September 1490).⁴³ In fact, Antwerp played a major role in the redistribution of foreign paper. At the beginning of the fifteenth century, for example, the city of Louvain was supplied with paper from Lombardy and Troyes by Antwerp traders.⁴⁴ Bales of paper produced in Burgundy, Champagne, and Lorraine were likewise shipped to England from

39 Adam, *Vivre et imprimer*, 1. 88.

40 Copy examined: Brussels, Royal Library of Belgium, Inc B 1.722 (1STC ic00413000; USTC 438841). List of different papers: *bull's head, cross, eyes, nostrils* (WM I 51687; WM I 00867) and *bull's head, eyes, nostrils, butterfly* (WM I 51689–51692). On the production of paper in Basel see Hans Kälin, *Papier in Basel bis 1500* (Basel: H. Kälin, 1974); Pierre L. van der Haegen, *Der frühe Basler Buchdruck. Ökonomische, sozio-politische und informationssystematische Standortfaktoren und Rahmenbedingungen* (Basel: Schwabe, 2001), pp. 85–92.

41 Arnould, 'Quand sont apparus les premiers moulins à papier?', p. 284, n. 85; Martin Wittek, 'Observations sur les papiers utilisés par la ville de Malines aux XIV^e et XV^e siècles', in André Toureux (ed.), *Liber amicorum Raphaël de Smedt* (4 vols., Leuven: Peeters, 2001), IV. 1–12; Pieter Santy, 'Een papieren revolutie? De introductie van het papier te Brugge (13^{de}–14^{de} eeuw)', *Handelingen van het Genootschap voor Geschiedenis te Brugge*, 140 (2003), pp. 202–268.

42 Léone Liagre-de Sturler, *Les relations commerciales entre Gênes, la Belgique et l'Oultremont d'après les archives notariales génoises aux XIII^e et XIV^e siècles* (3 vols., Brussels, Rome: Institut historique belge de Rome, 1969), III. 409–410.

43 Renée Doehaerd, *Études anversoises. Documents sur le commerce international à Anvers 1488–1514* (3 vols., Paris: S.E.V.P.E.N., 1962–1963), II. 43, no. 269 (see also nos. 177, 180, 269, 626, 965).

44 Raymond van Uytven, *Stadsfinanciën en stadseconomie te Leuven van de XII^e tot het einde der XVI^e eeuw* (Brussels: Paleis der Academiën, 1961), p. 432.

Antwerp.⁴⁵ Books could also be found on vessels carrying these goods. England was a prime market for the typographers of the Southern Low Countries. A significant share of their merchandise was sold there, mainly due to the inability of the local industry to meet the high demand for printed books.⁴⁶

The first printer who had his own paper mill was Pieter de Keyser, active in Ghent from 1511 to 1559.⁴⁷ In 1527 he received permission from the municipality to build a paper mill 'buten der Keyserpoorte' (outside the Emperor gate).⁴⁸ Pieter de Keyser was also a bookseller and a book binder, and so his role as a paper mill owner assured him control over almost all the different stages of the production and sale of a book. De Keyser sold his mill in 1545 to Marten Snouckaert, a lawyer who tried, unsuccessfully, to enter the business of printing books.⁴⁹ Snouckaert allegedly brought workers specialized in the manufacture of paper from Troyes. He finally ceded the mill to Pieter de Keyser's son Daniel de Keyser, in 1552.

4 The 'Paper Roads' in the Low Countries

Before I conclude this overview of the paper trade in the Low Countries, it is necessary to return to Dirk Martens and the supply of his workshop. As I have already pointed out very little data has been published on the purchases of paper by fifteenth-century printers from the Low Countries. However, some information is available. In their history of Alost, two local historians, Frans de Potter and Jan Broeckaert, quote an archival record indicating the purchase by Dirk Martens of two reams of paper in 1489 from a trader from Cambrai,

45 Gustaaf Asaert, *De Antwerpse scheepvaart in de XV^e eeuw (1394–1480)* (Brussels: Paleis der Academiën, 1973), pp. 278–281.

46 Paul Needham, 'Continental Printed Books sold in Oxford, c. 1480–3. Two Trade Records', in Martin Davies (ed.), *Incunabula. Studies in Fifteenth Century Printed Books Presented to Lotte Hellinga* (London: Oak Knoll Press, 1999), pp. 243–270; Paul Needham, 'The Customs Rolls as Documents for the Printed-Book Trade in England', in Lotte Hellinga and Joseph Burney Trapp (eds.), *The Cambridge History of the Book in Britain* (Cambridge: Cambridge University Press, 1999), pp. 148–163; Margaret Lane Ford, 'Importation of printed Books into England and Scotland', in Hellinga, Trapp (eds.), *The Cambridge History of the Book in Britain*, pp. 179–201; Adam, *Vivre et imprimer*, I, 129–130.

47 Rouzet, *Dictionnaire des imprimeurs*, pp. 113–114; Maurits Vandecasteele, 'De Gentse papiermolen in de 16^{de} eeuw', *Stadsarcheologie, bodem en monument in Gent*, 15 (1991), pp. 5–15; Adam, *Vivre et imprimer*, II, 164.

48 Adam, *Vivre et imprimer*, I, 70.

49 Victor van der Haeghen, 'Snouckaert van Schauwenberg (Martin)', in *Biographie nationale [de Belgique]* (43 vols., Brussels: Bruylant, 1866–1986), XXIII, 58–60; Rouzet, *Dictionnaire des imprimeurs*, p. 205.

named Jacquemart Castelain.⁵⁰ Although the identity of this merchant remains unknown, this document is very useful: it is an indication that some routes connected with French paper mills ran through Cambrai.

This information makes it possible for me to attempt a reconstruction of 'paper roads' between Eastern France and Dirk Martens' printing house. As we have seen, Martens imported the majority of his paper from Champagne and Lorraine. I propose three possible routes below: first, the transportation of paper purchased in Troyes; second, from the area of Bar-le-Duc; and, finally, the paper produced in Lorraine.

The city of Troyes was one of the most important centres for the production of paper in Champagne.⁵¹ The quality of its paper made the city famous. For example, in 1517, a contract between the chapter of the Bruges' Church of Saint Donatian and Dirk Martens specifies that for printing breviaries the typographer should use a paper manufactured in Troyes (*in papiro troyano*), of higher quality (*de primo*), with a Bourbon shield mark (*signo videlicet scute de borbonio*) (= a shield with three lilies).⁵²

The paper manufactured in Troyes could be shipped to Paris by the Seine and, then, be brought to Cambrai by waggoners via Senlis, Roze and Péronne (= road option 1 on fig. 4.3).⁵³ There is also another possibility: the road (= road option 2 on fig. 4.3). The paper could be carted from Troyes to Chalons-sur-Marne and,

50 Frans de Potter and Jan Broeckaert, *Geschiedenis der stad Aalst. Voorgegaan van eene historische schets van 't voormalige land van Aalst* (4 vols., Ghent: Annoot-Braeckman, 1873–1876), IV. 292. I have not yet found the document referred to by the two historians. The verbatim citation of the archive leads me to believe that the two historians did see this document: "Jan Casier heeft beloofd te rechte te bringhene jeghen Diericke Martens, Jacquemart Castelain, van Camerijcke, ter somme van 11^e riemen papiers". They also give the reference of the archive: Alost, Stadsarchief, Wettelijke passeringen, no. 1186, 1489–1490, fol. 187. I would like to thank Lieve Arnouts, curator of the Stadsarchief of Alost, for her help in this research.

51 See note 38.

52 The document is edited in Kamiel Heireman, *Tentoonstelling Dirk Martens 1473–1973. Tentoonstelling over het werk, de persoon en het milieu van Dirk Martens, ingericht bij de herdenking van het verschijnen te Aalst in 1473 van het eerste gedrukte boek in de Zuidelijke Nederlanden* (Aalst: Steedelijk Museum-Oud Hospitaal, 1973), p. 232. Negotiations apparently failed: no copies were found. On the other hand, an agreement was probably reached with the Parisian Antoine Bonnemere who published, three years later, an octavo *Breviarum ad usum ecclesie Sancti Donatiani* (USTC 437070).

53 This road is described in Charles Estienne, *La guide des chemins de France* (Paris: Charles Estienne, 1553), pp. 31–35 (USTC 41018). See also Émile Coornaert, *Les Français et le commerce international à Anvers fin du XV^e–XVI^e siècle* (2 vols., Paris: Marcel Rivière, 1961), II. 204–212.



FIGURE 4.3 Abraham Ortelius, *Theatrum Orbis Terrarum* (Antwerp: Gillis Coppens van Diest, 1570), *Galliae Regni Potentissimae* (34 × 50 cm) [David Rumsey Map Collection, www.davidrumsey.com]. — = road option 1; - - - = road option 2

then, reach the main route to Cambrai through Reims and Quiévrain.⁵⁴ My preference is for the first option. During the Middle Ages and the Renaissance, rivers were frequently used for the transportation of paper.⁵⁵ From Cambrai, the paper could be put on a barge and sent to Alost by the Scheldt via Antwerp. Barges were small vessels (20–25 metres long and between 1.75 and 3 metres wide) with a depth not exceeding 1 metre (= road option 1 on figure).⁵⁶ Some paper could also be transported from Cambrai by road to Brussels (= road option 2 on figure) and, thereupon, shipped to Antwerp. Archival records are

54 Fernand Braudel and Ernest Labrousse (eds.), *Histoire économique et sociale de la France* (8 vols., Paris: Presses Universitaires de France, 1970–1982), I, 384.
 55 Stevenson, ‘The First Book Printed at Louvain’, p. 405.
 56 Marc Suttor, ‘La navigation fluviale, des origines à 1850’, in Robert Halleux etc. (eds.), *Histoire des techniques en Belgique. La période préindustrielle* (3 vols., Liège: Les Editions de la Province de Liège, 2015), III, 882–885 (on the navigation on the Scheldt see pp. 879–887).

available in Antwerp for fifteenth-century paper shipped from Brussels to Antwerp. For example, on 14 July 1492, Merten Bosscot received more than 300 packets of paper from the Brussels boatmen Bertel Barchman and Mathys vander Heyden.⁵⁷

Martens also used paper manufactured near Bar-le-Duc, as is testified by the presence in the *Logica vetus* of paper with a watermark showing a shield with 'lile' in Gothic letters which stands for mills located in Lisle-en-Rigault [near Bar-le-Duc?] (see fig. 4.1).⁵⁸ Paper made there could be sent to Paris by the Marne and, then, could follow the same itinerary for paper produced in Troyes (= road option 1 on fig. 4.3). The other option would be to transport the paper to a harbour on the Meuse and, then, to ship it to Namur (= road option 2 on fig. 4.3). Transport on the Meuse was carried out by means of flat-bottomed boats whose tonnage was equivalent to the load of the two small caravels of Christopher Columbus.⁵⁹ From Namur, the paper could be carried by carters to Brussels, where boatmen could take it over to Antwerp and, afterwards, to Alost (= road option 1 on fig. 4.3).

The Meuse was also used as a means of dispersal (= road option 1 on fig. 4.3) for paper manufactured in Lorraine. Paper could be brought to Namur, and then, by cart to the printing houses located in the duchy of Brabant, such as Louvain, Brussels and Antwerp, or those located in the county of Flanders, such as Alost, Ghent or Audenarde.

5 Conclusion

This survey, limited to the paper of one printer, shows the importance of Eastern France for the paper supply of the first printing houses established in the Low Countries. Other investigations should be conducted on archival material and on books printed in this region. Such research could give us a better view of the paper trade, this most essential activity of the book industry. Until now, we have only had information on the purchases of paper made by Christoph Plantin's printing house. The archives of his firm indicate that he mainly did business with traders from Antwerp, Troyes and also from Paris, Rouen and La Rochelle. His accounts also give precious information on the fluctuation of the

57 Doehaerd, *Études anversoises*, II, 100, no. 670 (see also nos. 507, 617).

58 WM I 52848; Briquet 1885. On this town see also Briquet, *Les Filigranes*, I, 139–140.

59 Suttor, 'La navigation fluviale, des origines à 1850', p. 874 (on the navigation on the Meuse see pp. 868–879).

price of paper. Previously unexploited archives might help us to reconstruct the socio-economic aspect and the networks of actors involved in the paper business during the Early Modern Period, beyond Plantin's printing house.

My research might contribute to a new geography of the book trade, grounded partly on the routes I have outlined. Thus, we might have to reconsider the first wave of the establishment of the printing houses of the Low Countries in light of these 'paper roads'. In the Southern Low Countries, the first towns that entered the typographic era are located on a river, as for example Ghent, Audenarde and Antwerp in the Scheldt Valley, or on a tributary as are Brussels and Louvain. This model should perhaps be tested for the whole fifteenth-century European industry of the printed book.

In conclusion, the methodology developed here – combining archival records with a bibliographical approach – should be considered by any scholar wanting to contribute to a future paper trade history.