



Harry Carter (1901–82) was both a typographic designer and one of the most notable historians of typography. In his later career (1954–80) he was Archivist to Oxford University Press.

James Mosley was for many years Librarian of the St Bride Printing Library, London; he is Visiting Professor in the Department of Typography at the University of Reading.

The image on the front cover is of Conrad Berner's specimen of types (Frankfurt a. M. 1592), taken from the reproduction in *Type specimen facsimiles 1–15* (1963).

# A VIEW OF EARLY TYPOGRAPHY

UP TO ABOUT 1600

HARRY CARTER

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REPRINTED WITH AN INTRODUCTION BY JAMES MOSLEY

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# INTRODUCTION TO THE REPRINT

JAMES MOSLEY

The text reprinted here was originally given under the title 'Printing types, 1450–1600' in the series of Lyell Lectures at Oxford for 1968.<sup>1</sup> Two thousand copies were printed, but Carter's book quickly became scarce. Its modest early sales made it the victim of an exercise in automatic stock-control on the part of the publisher, which led quite soon after publication to the destruction of the remaining stock of the edition, so that those who wished to read it (a steadily growing number) were soon frustrated by the difficulty of finding copies for sale or even on the shelves of libraries. Notwithstanding these difficulties, its reputation has continued to grow.<sup>2</sup> This reprint reproduces the original edition, a demy octavo, the format chosen by Carter himself, set in Monotype Bembo and printed from type at the University Press, Oxford, in 1969.

Over thirty years after its publication, Carter's *View of early typography* is a valuable, even an indispensable text. Among its predecessors, Updike's *Printing types*, first published in 1922 and only partially revised in 1937, although highly readable, excellently illustrated, and covering a much longer span of time, is now limited in its value where this early period is concerned by its strongly 'national' concept of typography, and a lack of informed interest in the technical and economic as-

1. Carter's preferred title for their publication as a book was 'An over-all view of early typography'; when it was objected that this title was too long, Carter offered 'A view of early typography'. He wrote, 'Early Typography suggests something more thorough and exhaustive than these lectures are. I think "Printing types 1450–1600" is open to an objection that too many titles of current books can be shortened to "printing types".' Letter to the Secretary to the Delegates of the Clarendon Press, 23 June 1968 (Carter Papers, Archives of the Oxford University Press, access to which was kindly granted by courtesy of the Secretary to the Delegates).

2. An excellent translation into Spanish, the work of Sonia Garza Merino, was published under the title *Orígenes de la tipografía: punzones, matrices y tipos de imprenta (siglos xv y xvi)* (Madrid: Ollero & Ramos, 1999), in the series of reprints of typographical studies edited by Julián Martín Abad.

pects of type-making.<sup>3</sup> *Type designs*, by A. F. Johnson (1934, third edition 1966), although more sober in its tone, and twice revised, is more modest in its scope, and very inadequately illustrated. Carter's is still the only work that places its subject in the context of the growing awareness that developed between 1920 and 1960 of the origins of the types used in Europe during the sixteenth century and their international distribution, an awareness that derived from studies of the surviving punches and matrices for these types and of the written and printed documents that related to them. These studies threw new light on types and their makers, not only in the sixteenth but also during the two subsequent centuries, and they provide a basis for a radical and more general reassessment of typographical history.

Harry Carter played an active role in the later period of that rediscovery, so that parts of his text have the immediacy of a first-hand narrative, told in an English that has a rare simplicity and clarity. In one respect he was uniquely qualified among contemporary scholars to write it, since he had not only a rare command of languages, classical and modern, but had also set type and printed at the hand press, cut his own punches, and cast type in a hand mould. Carter's book was set in type on the Monotype machine at the Oxford University Press and printed at its premises in Walton Street. Within barely five years of its publication,

3. *Printing types, their history, forms and use* (Cambridge, Massachusetts: Harvard University Press, 1922). Second edition, 1937. (Reprinted by Oak Knoll Press with the British Library, New Castle, Delaware, and London, 2001, and by Dover Publications, New York, 1976). Updike's work originated as a series of lectures given in 1915 at the Harvard School of Business Administration. Its value is diminished by the author's failure to realize that some popular types from the sixteenth century onwards were not only cast simultaneously by several typefounders in different countries from multiple sets of matrices, and also that these matrices remained in use for centuries, a failure that is aggravated by a wish to identify unique 'national' qualities in types. His foibles also included a prejudice against things perceived to be Dutch, so that in his judgment the small-format works printed by the Elseviers at Leyden, use 'solid, monotonous type which is Dutch and looks so'. Nonetheless these types can now be attributed to major French sixteenth-century punchcutters, as earlier generations had always known.

letterpress printing had been effectively displaced in Britain by offset lithography. Metal type dematerialized, the texts of books being set at first by the optical systems known as 'photocomposition', and then in digital form.<sup>4</sup> As familiarity with metal types and the traditional processes by which they were made faded from contemporary experience, Carter's firm grasp of their reality and his ability to convey it clearly in words became all the more valuable to a later generation of readers.

Harry Carter was born in 1901. His father was an educational specialist with a strong belief in the value of the learning of languages and a gift for teaching them, a background from which Carter derived great advantage.<sup>5</sup> He read law at Oxford, but did not pursue his intended career as a barrister, having become fascinated by typography at a moment when it offered many attractions. He spent a brief period in the drawing office of the Monotype Corporation, for whom he drew supplementary characters from which in 1931 a Cyrillic type (series 169R) was made, using as a basis the existing roman typeface known as Baskerville, derived from the types cut for John Baskerville of Birmingham (1706–75). He worked as a designer with the Kynoch Press, printers at Birmingham, and then briefly for the publishing imprint known as the None-such Press.

In 1930 Carter had published an English translation of the *Manuel typographique* (Paris, 1764–6) of Simon-Pierre Fournier, adding notes to it in which he drew not only from extensive reading of the literature

4. Letterpress printing, which had permitted the use of some of the specialist hand-set types for which the Press was noted, ceased at Oxford in 1983 and the printing house closed altogether in 1989. The standard of typesetting and letterpress machining (printing) at Oxford had been high, but was already declining and there are some flaws of detail in the setting of this book that would not have occurred a decade earlier. By the date of the printing of Carter's later *History of the Oxford University Press* (1975) it was widely noted that the standard of production by letterpress at Oxford, as elsewhere, had declined still further.

5. I owe some details of Carter's life to an unpublished study by John A. Lane, to whom I am indebted for permission to use them. There is a brief biographical sketch with bibliographical notes, signed by John Dreyfus and Peter Davison, in the 'Issue honouring Harry Graham Carter' of *The Library* (5th series, vol. 29, no. 1, March 1974), pp. 3–4.



of typefounding but also from his knowledge of contemporary typefounding.<sup>6</sup> He had taken lessons in punchcutting from the London typefounder Alexander Shanks, and during the Second World War, on military service in Palestine, he cut punches for a Hebrew type and published a brief account of his own experience of punchcutting.<sup>7</sup> After the Second World War Carter was the chief designer at His Majesty's Stationery Office, the official publisher of government documents and also of the publications of many of the major museums. In 1952 the University Press at Oxford appealed to him to examine and then to make a satisfactory edition from a poor English translation that had been made of Charles Enschedé's history of typefounding in the Low Countries, a work first published in French in 1908. It was an undertaking that he did not accomplish until 1978, because in the mean time he had become ever more deeply involved in other projects that represent his major contributions to typographical history.

In 1954 Carter was persuaded by the Printer to the University, Charles Batey, to take up the appointment of Archivist at the Oxford University Press. Stanley Morison, having long ago undertaken to write the history of the so-called Fell types at Oxford,<sup>8</sup> was aware that there were matrices at Oxford for types that were also represented in other historical collections, including those of the Plantin-Moretus Museum at Antwerp. A part of Carter's brief was therefore to look into these collections. It was known from a specimen of them published by the Museum's curator Max Rooses in 1905 that much old type survived, but in poor condition, in the typesets of the old printing-office preserved in the museum. It had gradually become known that Plantin's stock of punches and matrices had also survived intact. The sense of excite-

6. Carter's edition (which had been reprinted on its own in 1973) was reprinted with additional notes by the present editor to accompany a facsimile reprint of the *Manuel typographique* (Darmstadt: Lehrdruckerei der Typographischen Hochschule, 1995).

7. 'Making a printing type', *Palestine Post*, 14 December 1945. Reprinted New York, October 1974 (4 pp.), as a keepsake for the Printers' Pilgrimage to Jerusalem. Carter's surviving punches, including his Hebrew, form part of a small personal archive donated by him to the St Bride Printing Library, London.

8. Nicolas Barker, *Stanley Morison* (London: Macmillan, 1972), p. 184.

ment generated by this realization and its dawning implications for typographical scholarship were well described by Harry Carter's son, Matthew:

This astonishing discovery: that the finest collection of printing types made in typography's golden age was in perfect condition (some muddle apart), was made even more valuable by the survival under the same roof of Plantin's accounts and inventories which named the cutters of his types. The job of matching the material to the documents took about five years, and the results, which have been published, have had considerable impact on typographical scholarship, on bibliography and on the aesthetic appreciation of type design of that period. It is now possible to study a sufficient corpus of confidently attributed work by half a dozen sixteenth-century cutters to get an idea of the quantity of their output, and a proper sense of their individual styles as designers. The result of such an assessment must be, I am sure, to confirm the stature of Garamond, but to see him no longer as a solitary eminance but rather as first among equals.<sup>9</sup>

Carter became a member of the small team of researchers who performed the task of sorting and cataloguing the materials, of which a preliminary account was presented at the celebrations that were held at Antwerp in 1955 to mark the four hundredth anniversary of Plantin's first printing. His experience at Antwerp involved handling punches, the varying forms of which often provided clues to the identity of the punchcutter, and original matrices, from which he cast sample types, using the traditional hand mould. These materials were related to the abundant documents in which the practical operation of Plantin's typefoundry is documented. This experience, and his comprehension of the rich surviving documentation, adds value to Carter's share of the editorial work, undertaken with Herbert Davis, for the new edition of Joseph Moxon's *Mechanick exercises* relating to punchcutting,

9. Matthew Carter, 'Galliard: a modern revival of the types of Robert Granjon', *Visible Language*, vol. 19, no. 1 (Winter 1985), pp. 77-97.

typefounding and printing, published in 1683–4.<sup>10</sup> His edition of 1961, written with Christopher Ricks, of the *Dissertation upon English typographical founders and founderies* (1778) of Edward Rowe Mores,<sup>11</sup> the fundamental historical text of the first centuries of English typefounding, was able to establish connections with material from Continental European sources that would have remained unguessed at some decades earlier.

Among Carter's other major typographical publications are his contribution to the series of *Type specimen facsimiles* published in 1963 under the general editorship of John Dreyfus, to which reference is made on page 2 of his book.<sup>12</sup> This was extended with a volume of facsimiles of specimens of types from the archives of the Museum Plantin-Moretus at Antwerp, edited by Carter with H. D. L. Vervliet.<sup>13</sup> Carter's service to Morison's history of the 'Fell' types at Oxford, for which (with John Simmons) he wrote a large part of the catalogue of the surviving typographical materials, was acknowledged handsomely on the title page of his *John Fell, the University Press, and the 'Fell' types* (Oxford: Clarendon Press, 1967), and it was followed by a substantial editorial commentary that Carter added to the reprint made in 1970 of *A century of typography at the University Press, Oxford*, the account of the early typo-

10. London: Oxford University Press, 1958, second edition 1962 (reprinted 1978 by Dover Publications, New York). A new edition of the Davis and Carter text, with an introduction and notes by John A. Lane, is currently in preparation.

11. Edward Rowe Mores, *A dissertation upon English typographical founders and founderies, 1778*; edited, with an introduction and notes, by Harry Carter and Christopher Ricks. London: Oxford University Press, 1961 (corrected reprint, 1963).

12. This project owed its genesis to a proposal made in 1941, when Carter and others (Ellic Howe, A. F. Johnson, Stanley Morison, Graham Pollard) published a concise list of all known type specimens before 1800, with the suggestion that some of the more important should be published ('A list of type specimens', *The Library*, 4th series, vol. 22, no. 4 (1941–2), pp. 185–204).

13. *Type specimen facsimiles [16–18]: reproductions of Christopher Plantin's Index sive specimen characterum, 1567, and Folio specimen of c. 1585, together with the Le Bé-Moretus specimen c.1599* (London: The Bodley Head, 1972).

graphical materials at Oxford prepared in 1900 by the Printer to the University, Horace Hart, a beautiful book that had been printed in a very small edition. The progress of Carter's English edition of Charles Enschedé's history of the typefoundries of the Low Countries was inevitably delayed by the discoveries that were made during this period at Antwerp and elsewhere. The volume was completed in 1978 under the overall editorship of Lotte Hellinga.<sup>14</sup>

A section of Carter's book that has been especially valued by later writers is the first chapter, on 'The technicalities of print' (pages 5 to 22), and the fifth, on 'The history of typefounding and punchcutting' (pages 93 to 116). 'What I have to describe extends in time from about 1440 to about 1900', wrote Carter (page 5), and although his wording leaves the matter open to discussion, his reference to *Sandgußverfahren* (sand-casting methods) betrays a certain scepticism concerning the relevance of such processes. In remarking, 'I can find nothing in the documents on early printing or in the printing itself to negative the use from the first of punches, matrices, and moulds' (page 14), he followed the conclusions of T. L. De Vinne, a professional printer writing in 1876, and of Otto Hupp, who had practical experience of die-sinking and who for many years between the two World Wars maintained a campaign against Gustav Mori and Gottfried Zedler, who had adopted and developed the ideas of those who believed that the early makers of types used other methods.

Their ideas have recently found some support in observations made by Paul Needham and Blaise Agüera y Arcas of a work attributed to Gutenberg and held by the Scheide Library, Princeton, of which Dr Needham is librarian,<sup>15</sup> the Bull of Callixtus III, which is set in the so-called DK-type. Their observations appear to show that the image of many of the types in this document, and in some other early printing too, was derived from a pattern formed from separate, mobile

14. *Typefoundries in the Netherlands from the fifteenth to the nineteenth century*, translated and edited by Harry Carter, with the assistance of Netty Hoeflake; edited by Lotte Hellinga (Haarlem: Joh. Enschedé en Zonen, 1978).

15. For Needham's observations on the printing of the *Catholicon*, see the notes below.

elements, a technique which, although its details remain mysterious, seems to exclude the use of the conventional punch, matrix and adjustable mould described by Carter, which later became the universal system for making type.

In making their observations, which are so far largely unpublished,<sup>16</sup> Needham and Agüera y Arcas have implied that the same features have been seen in the type of the 42-line Bible and in later, but unspecified, types of the incunable period. The question that has thus been raised, without offering an answer, is when was the punch, matrix and mould introduced? Although it is not until the 1470s that clear reference to these objects can be found in contemporary documents, an early claim was made on behalf of Gutenberg's assistant Peter Schoeffer as the inventor of the conventional matrix, a claim that was often repeated and may deserve to be taken seriously.<sup>17</sup> Similarly, the account of a visit to Mainz of Nicolas Jenson on behalf of the King of France in 1458 to investigate the report that the art of printing recently discovered there was the work of 'people skilled in cutting punches', although it has not been given a great deal of attention in recent years (Carter passes over it in silence), need not necessarily be dismissed.<sup>18</sup>

16. They were made at a lecture at the University of London in December 2000 and repeated some weeks later at the Grolier Club, New York. The fullest and most accurate report of the London lecture was published by Ursula Rautenberg ('In den Sand gesetzt', *Frankfurter Allgemeine Zeitung*, 14 February 2001). For a very brief summary, see also Blaise Argüera y Arcas and Adrienne Fairhall, 'Archaeology of type', *Nature*, vol. 411 (28 June 2001), p. 997.

17. Johannes Trithemius, *Annales Hirsaugienses*, 1514. Latin text printed in *Spanheimensis annalium Hirsaugiensium opus*, St Gallen, 1690. Reprinted with French translation in G. Bechtel, *Gutenberg et l'invention de l'imprimerie* (Paris, 1992), pp. 634–6. In his narrative, which contains some doubtful detail, Trithemius claimed to have heard from Peter Schoeffer himself an account of his introduction of his own invention of a new way of making type 'as it is now made', with 'what are known as matrices'.

18. For a discussion, see Lotte Hellinga, 'Printing types and the printed word: considerations around new insights into the beginning of printing', due for publication in *Archiv der Geschichte des Buchwesens* for February 2002.

One other of Carter's topics may be worth a word. His criteria for the identification of type (page 3) are to be able to name its punchcutter, the body for which it was cut, and its style. Body and style are perhaps sufficient to *place* a type in its category, but may not in the end exactly answer the question put by Fredson Bowers, 'how can I tell in what type this book is printed?' The chief difficulty of the bibliographer, especially one without great familiarity with types, is to know just how, faced with a page of printed text, one can possibly name the punchcutter. Even if a type may seem to resemble an example in a competently-edited facsimile of a typefounder's specimen that can be reliably attributed to its punchcutter, this does not help the observer to tell if the two are the same or merely similar; and an example of this kind is likely to be a happy exception rather than the rule. On the printed page, type appears in a variety of conditions, new or worn, over- or underinked. Type from identical matrices may look very different if it is cast in a mould for a larger or smaller body, or if a different setting of the registers of the same mould makes it appear more widely or closely set. The extent to which the dimensions of the impression have altered when the paper it is printed on has shrunk in drying, perhaps unevenly, after having been printed damp make it unwise to rely on exact measurements from the page.<sup>19</sup> In the end identification may depend on the matching of a few idiosyncratic characters, and yet two different fonts of what is essentially the same type may contain some sorts that are quite alien to it.

Historians of type often claim to penetrate such 'noise' and to make their identifications by eye, and in some cases it can indeed be remarkably easy to be instantly convinced, merely by visual comparison, of what appears to be an exact match. But in other cases, where uncertainty persists, it may be most unwise to override it. There is no doubt that, as Carter was among the first to show, many sets of matrices from the punches of some best-selling French types of the sixteenth century

19. The only writer to hazard a guess at the extent of the shrinkage appears to be Philip Gaskell, who suggested that it can vary between 1 and 2.5 per cent, being more pronounced across the chain-lines than along them (*A new introduction to bibliography*, Oxford: Clarendon Press, 1972, p. 13). Experiment confirms Gaskell's observation that the shrinkage may not be equal in both directions.

were widely distributed. In the 1750s Jean-Pierre Fournier, known as Fournier l'aîné, owner of the Le Bé foundry, made the claim that the types of Garamond, of which his foundry in Paris possessed one of the most extensive collections of matrices, 'had made the reputation of Plantin and the Elseviers'. But it is also unwise to be over-confident in matching apparently identical types. Imitations of existing and popular models are part of the history of type. In the second half of the eighteenth century the types of the new foundry of Joseph Fry were claimed, with justice, to have been copied from those of the established Caslon foundry 'with such accuracy as not to be distinguished from those of that celebrated Founder'. And Professor Vervliet warns of the likelihood that, where French types of the sixteenth century are concerned, the imitator may often have been the original punchcutter, supplying a copy of work that had already found success.<sup>20</sup> Such puzzles will only confirm the reader of Carter's book in the belief that the study of types requires a rare combination of exact observation and fine sensibility.

In conversation, before he wrote the present text, Carter once described his future programme of work as, to write the history of the Oxford University Press and to 'rewrite Updike'. In the event, his history of the Press was not completed. As for Updike, although the period covered by the present book is a long way short of the time span covered by his ambitious work, it points one way in which its recasting might be accomplished. Carter not only had the knowledge to write a view of the subject that would also have included later typography as well, but in the typographical notes that he supplied for the catalogue of a collection of works designed to illustrate the history of typography and illustration, issued in 1976,<sup>21</sup> he published a text that might have supplied the basis for such a history, and it must be regretted that he never attempted it. In all his published work he left a sure foundation for the more complete history of printing types that must, some day, be written.

20. H. D. L. Vervliet, 'Les italiques de corps de Gros-romain de la Renaissance française', *Bulletin du Bibliophile* (1, 1999), pp. 5-45, at p. 9.

21. *Catalogue of the Edward Clark Library, with typographical notes by Harry Carter*, etc, general editor P. J. W. Kilpatrick (Edinburgh: Privately printed for Napier College of Commerce and Technology, 1976), 2 vols.

## CORRIGENDA AND ADDENDA

The notes that follow either correct Carter's text or add a brief account of further, complementary work on topics that he dealt with. It will be seen that they are indebted to work by Professor H. D. L. Vervliet and Dr Lotte Hellinga. I am grateful to both of them for their kind advice, and to Dr Hellinga for a view of an article in preparation for publication in 2002.

In the original edition the references to illustrations on pages 118, 121 and 122 were wrong. They have been corrected in this reprint. The illustrations, which were originally gathered in nine separate sections, have here been brought together and placed between pages 126 and 127.

### 9 – some old moulds

These were described in an essay written for the special issue of *The Library* published 'in honour of Harry Graham Carter' by Mike Parker, 'Early type-founders' moulds at the Plantin-Moretus Museum', *The Library*, 5th series, vol. 29 (1974), pp. 93–102. He concurred with the suggestion made by H. D. L. Vervliet in his review of the *View of early typography (Quaerendo, vol. 1 (1971), pp. 223)*, that some moulds at Antwerp are of the sixteenth century.

### 9 – The practice of this printer

The second volume of the study of the Plantin printing-house by L. Voet, published in 1974, *The golden compasses: a history and evaluation of the printing and publishing activities of the Officina Plantiniana at Antwerp* (Amsterdam, 1969–74), deals with its printing and typefounding.

### 9 – optical delusions

Carter examined several of them in his essay, 'Optical scale in typefounding', *Typography*, no. 4 (Autumn 1937), pp. 2–6.

### 11 – he had the matrices for the Greek types

No evidence is known for Garamond's ownership of matrices for this type, something that Carter may have inferred from its use by Andreas Wechel, one of the executors of his will. See H. D. L. Vervliet, 'Greek printing types of the French Renaissance: "The "grecs du roy" and their successors', *Journal of the Printing Historical Society*, new series, no. 2 (2000), pp. 3–55, at pp. 12–15.

### 12 – note 1

For Malis read Melis



15 – note 3

The study by Christian Axel-Nilsson of the typographical materials at Stockholm was published as *Type studies: the Norstedt Collection of matrices in the Typefoundry of the Royal Printing Office, a history and catalogue* (Stockholm, 1983).

18 – a pyramidal thing

In his essay on 'Early typefounders' moulds at the Plantin-Moretus Museum', at p. 96 and plate xvib, Mike Parker drew attention to a mould designated G1 48. It has 'pyramidal' insulating covers of wood, making a shape which resembles the object depicted in the engraving by Amman. There is an early mould with woods of a similar shape in the Museum of Joh. Enschedé, Haarlem.

18 – The oldest description

The description of typefounding and the typefounder's mould by Biringuccio (or Biringucci) differs slightly but significantly in the two editions of his work, dated 1540 and 1550. Both passages are included in a collection of accounts of early printing and typefounding with a commentary by Conor Fahy, 'Descrizioni cinquecentesche della fabbricazione dei caratteri e del processo tipografico', *La Bibliofilia*, anno 88 (1986), pp. 47–86.

19 – It is recorded of a man named Kraft

Although Carter does not make it clear, his account of both Kraft and Arndes was derived via Haebler (in his article of 1924) from documents printed in summary form by Vermiglioli in 1820. Kraft (who appears in Vermiglioli's Italian sources as 'Crafto' – the conjectural German version of the name is Haebler's) was one of two printers from Mainz working in Perugia who gave witness in 1477 in support of a claim for wages due to Stephan Arndes, a compositor from Hamburg who was also known as Stefano of Mainz. Carter truncated the first passage, in which Arndes stated that Kraft had helped him in 'filing and finishing punches and matrices and letters for printing books and also in correcting (justifying?) and filing these matrices' (*ad limandum et aptandum punctellos matrices et* [sic in Vermiglioli – Haebler prints 'ad'] *litteras aptas ad imprimendum libros et etiam ad corrigendum et limandum dictas matrices*). The documents indicate that Arndes had learned from Kraft and 'made an instrument for casting letters for printing books' (*laboravit fecit et composuit unum instrumentum aptum ad jactandum litteras ad imprimendum libros*). There is no reference to Naples in the sources cited by Vermiglioli.

The will of 'a Venetian printer of 1484' was that of Johannes Herbort of Seligenstadt. The phrase relating to 'sets of justified matrices with the moulds for them' is based on the citation given by Haebler, *duas matres et justatas litterarum et formas pertinentes*, which (although it scarcely affects Carter's

interpretation) was shown by Wehmer to be a truncated form of the passage in the original document, which Haebler had misconstrued (C. Wehmer, 'Zur Beurteilung des Methodenstreits in der Inkunabelkunde', *Gutenberg-Jahrbuch* 1932, p. 311, note 6). Haebler's article of 1924 was also published in an English translation, 'Typefounding and commerce in type during the early years of printing', *Ars Typographica*, vol. 3, no. 1 (1926), pp. 3–35.

#### 20 – a small Roman type

The type was identified by A. F. Johnson with one used in Cologne by Peter Quentell in 1527. See Charles Enschedé, *Typefoundries in the Netherlands*, 1978, trans. and ed. Carter et al. (1978), pp. 29–32. See also Ernest Braches, 'The Sheffers type: some observations on the Schoeffer/Quentell Augustin Romein No. 6 of Joh. Enschedé en Zonen, Haarlem', *Quaerendo*, vol. 20 (1990), pp. 262–309 (later published in book form as *The steadfast tin soldier of Joh. Enschedé English-bodied roman No. 6*, Aartswood: Spectator-Pers, 1992); and H. D. L. Vervliet, 'Enschedé's tinnen soldaat: het Schefferse lettertype in de Nederlandse typografie van de zestiende eeuw', in *Van pen tot laser: 31 opstellen over boek en schrift aangeboden aan Ernest Braches* (Amsterdam: De Buitenkant 1996, pp. 314–19).

#### 21 – the typemetal

A summary of the composition of the alloys employed in surviving early types is given in an essay by Stefan Pelgen on types found during the excavation of the site of a printing-office in Mainz, 'Zur Archäologie der Buchdruckletter: neue Funde zur Schriftgussgeschichte von (Kur-)Mainz', *Gutenberg-Jahrbuch* 1996, pp. 182–208.

#### 22 – three-quarters tin

More exactly, 'three parts tin'. Biringuccio's recipe, *De la pirotechnia* (1540), Lib. IX, Cap. VII, reads (in the rendering of Gnudi and Smith) 'three parts of fine tin to an eighth part of black lead and another eighth part of fused marcasite of antimony' (*Le lettere da stampare li libri primamente si fa una compositione di tre parti di stagno fino et una ottava parte di piombo negro et un'altra ottava parte di margassita d'antimonio fusa*).

#### 32 (and fig. 27) – a Mainz Cathedral Service-book

The large type in this work is not Van den Keere's, but perhaps a German seventeenth-century copy (H. D. L. Vervliet, review of *A view of early typography*, *Quaerendo*, vol. 1 (1971), p. 223).

#### 33 – the face of the *Catholicon* punches

The technical aspects of the printing of the *Catholicon* became the subject

of discussion in 1985 after the publication of an article by Paul Needham, who, having observed that its composition appeared to be made up of solid two-line units, offered the hypothesis that its three consecutive printings were done from two-line castings, or 'slugs' (a term borrowed from the product of the Linotype machine). His initial article was, 'Johann Gutenberg and the Catholicon Press', *Papers of the Bibliographical Society of America*, vol. 76 (1982), pp. 395–456, with a later overview in, 'The Catholicon Press of Johann Gutenberg: a hidden chapter in the invention of printing', *Wolfenbüttler Notizen zur Buchgeschichte*, Jahrgang XIII, Heft 2 (1988), pp. 199–230. An alternative view of the dating of the reprints of the *Catholicon* and of the 'slugs' was offered by Lotte Hellinga, 'Analytical bibliography and the study of early printed books, with a case study of the Catholicon', *Gutenberg-Jahrbuch*, 1989, pp. 47–96. The debate can be followed in some subsequent articles in *Gutenberg-Jahrbuch*: Needham, 'Corrective notes on the date of the Catholicon press', 1990, pp. 61–4; Hellinga, 'Comments on Paul Needham's notes', 1990, pp. 65–9; Needham, 'Further notes on the Catholicon press', 1991, pp. 101–26; Hellinga, 'Slipped lines and fallen type in the Mainz Catholicon', 1992, pp. 35–40; Needham, 'slipped lines in the Mainz Catholicon: a second opinion', 1993, pp. 25–9.

39 – several presses at Cologne

More correctly, 'several presses at Cologne and with Jac de Breda's and Richard Pafraet's in Deventer'.

39 – Jan Veldener went to Brabant

Veldener (Hellinga, *Printing types*, i. 17–20), who is now generally thought to have been a maker of type rather than a client, went to Louvain (in Brabant), and later to Utrecht (which is not in Gelderland). For the early Veldener types, see Paul Needham, 'William Caxton and his Cologne partners: an enquiry based on Veldener's Cologne type', in: *Ars Impressoria, Entstehung und Entwicklung des Buchdrucks: eine internationale Festgabe für Severin Corsten zum 65. Geburtstag*. H. Limburg, Hartwig Lohse, W. Schmitz, eds. (Munich, etc, 1986). A further study by Corsten of the Veldener types is due to appear in a Festschrift for Elly Cockx.

39 – Pieter de Os at Deventer

Pieter van Os van Breda printed at Zwolle, but his types did not come from Cologne.

45 – upright small capitals

See Margaret M. Smith, 'The pre-history of "small caps": from all caps to smaller capitals to small caps', *Journal of the Printing Historical Society*, no. 22 (1993), pp. 79–106, citing use of small capitals by Lignamine, Rome, in the 1470s, and Froben, Basel, from 1514.

72 – the roman fount that Aldus Manutius had made

The types of Aldus were the subject of an essay by Giovanni Mardersteig, 'Aldo Manuzio e i caratteri di Francesco Griffio da Bologna', in *Studi di bibliografia e di storia in onore di T. De Marinis* (Vatican City, 1964), vol. 3, pp. 105–47, reprinted in *Scritti di Giovanni Mardersteig sulla storia dei caratteri e della tipografia* (Milan: Il Bibliofilo, 1988). pp. 107–58.

83 – In 1530–2 letter-cutting for printers

New types made in Paris during the late 1520s and early 1530s have been surveyed in two subsequent studies: Nicolas Barker, 'The Aldine roman in Paris 1530–1534', *The Library*, 5th series, vol. 29 (1974), pp. 5–20, and Kay Amert, 'Origins of the French old style: the roman and italic types of Simon de Colines', *Printing History*, vols. 13–14 (1991/2), pp. 17–40.

86 – He cut a large number of type-faces

For Haultin's types, see H. D. L. Vervliet, 'Printing types of Pierre Haultin (ca. 1510–87)', Part I: Roman types, *Quaerendo*, vol. 30 (2000), part 2, pp. 87–129; Part II: Italic, greek and music types, vol. 30, part 3, pp. 173–227.

93 – convent at Ripoli

The documents relating to the press at Ripoli were published in full in: *The diario of the printing press of San Jacopo di Ripoli 1476–1484: commentary and transcription* by Melissa Conway (Florence: Olschki, 1999).

98 – note 4

The portfolio with the Berner specimen, one of three containing the Haeberlin or Mori Collection of type specimen sheets in the Stadt- und Universitätsbibliothek, Frankfurt am Main, was mislaid for some years after the Second World War. It came to light with its contents intact a few years after the publication of Carter's book. The reproduction in *Type specimen facsimiles 1–15*, ed. Dreyfus (1963), had been made from a collotype facsimile published in Gustav Mori, *Eine Frankfurter Schriftprobe vom Jahre 1592: Studie zur Geschichte des Frankfurter Schriftgiesser-Gewerbes* (Frankfurt am Main, 1920).

99 – putting Garamond's name to the 'Petit Canon' Roman

For this type, first seen in use in 1547, see H. D. L. Vervliet, 'Roman types by Robert Granjon', *De Gulden Passer*, Jrg. 76–7 (1998–9), pp. 5–76 (at pp. 16–20), where it is accepted it as Granjon's unaided work, possibly based on a type of Colines.

101 – 'taillée de feu mon pere'

For 'taillée de feu mon pere' read 'taillé par feu mon pere'. The specimens sent by Guillaume II Le Bé to Moretus are reproduced in *Type specimen*

*facsimiles 16–18*, edited by H. D. L. Vervliet and Harry Carter, London: The Bodley Head, 1972.

102 – some punches of William Caslon's

The punches illustrated in fig. 70 were from a collection of materials from the Caslon foundry acquired at its closure in 1936 by the Monotype Corporation, presented to the Oxford University Press in 1964, and transferred in 1973 to the St Bride Printing Library, London. There is a summary of surviving materials of the Caslon foundry in the introduction and notes to a facsimile edition of the *Specimen of printing types by William Caslon and Son, 1766* (*Journal of the Printing Historical Society*, no. 16, 1981–2), and in Justin Howes, 'Caslon's punches and matrices', *Matrix* no. 20 (2000), pp. 1–7.

104 – some records about him

Jenson's will, in which his punches figure (*ponzoni, cum quibus stampantur matres, cum quibus matribus fiunt littere*), was printed by Carlo Castellani, *La stampa in Venezia* (Venice, 1889) pp. 85ff., and translated into English by Pierce Butler, *The last will and testament of the late Nicolas Jenson* (Chicago, 1928). Documents relating a journey by Jenson to Mainz in 1458 at the King's order were studied and printed by Karl Dziatzko, 'Die Ordonnanz Karls v11 von Frankreich vom 4. Oktober 1458', *Beiträge zur Gutenbergfrage: Sammlung Bibliothekswissenschaftlicher Arbeiten 11* (Berlin 1889). The earliest of these documents to survive (Bibliothèque nationale de France MS. fr. 5524, ff. 152v, 153r) is reproduced by Lothar Wolf, *Terminologische Untersuchungen zur Einführung des Buchdrucks im französischen Sprachgebiet* (Tübingen, 1979), Abb. 1. The information that Jenson was employed at the mint, either in Paris or at Tours, is first seen in versions of these documents that were published in the eighteenth century but of which the location is currently unknown. A fuller examination of these texts by Lotte Hellinga, in her article 'Printing types and the printed word: considerations around new insights into the beginning of printing', is due for publication in *Archiv der Geschichte des Buchwesens* for February 2002.

104 – they do not positively affirm that he was the cutter

But such a claim was made in the *Cologne chronicle*, 1499 (see p. 26), which in a passage denying suggestions that Jenson invented printing or that he was the first printer in Venice, says that men still living could bear witness that books were printed in Venice before Jenson came there and 'began to cut and make types' (*began schriftt zo snijden und bereyden*).

105 – against Ernst Consentius

Consentius published his attack on Haebler's method in a monograph, *Die Typen der Inkunabelzeit: eine Betrachtung* (Berlin, 1929) and followed it with

an article, 'Die Typen und der Gesamtkatalog der Wiegendrucke: eine Kritik', *Gutenberg-Jahrbuch*, 1932, pp. 55-109.

111 – note 1

'There is indeed a mistake in Morison's dating. Read 1517 instead of 1516.' (H. D. L. Vervliet, review of *A view of early typography, Quaerendo*, vol. 1 (1971), p. 223).

117 – Supplement on italic

For italic types used in France from the 1530s, see H. D. L. Vervliet, 'Les italiques de corps de Gros-romain de la Renaissance française', *Bulletin du Bibliophile* (1, 1999), pp. 5-45.

122 (and fig. 83) – a face which ... is reliably ascribed to Garamond

Although he accepts the attribution to Garamond, the earliest instance of the use of this type noted by Vervliet is 1562, a year after Garamond's death, in Joannes Despauterius, *Universa grammatica* (Paris: Gabriel Buon). It is type 11 in H. D. L. Vervliet, 'Les italiques de corps de Gros-romain de la Renaissance française', *Bulletin du Bibliophile* (1, 1999), pp. 5-45.

123 – Gagny himself

The will of Gagny (died 1547) ordered payment to be made to Charles Chiffin, goldsmith of Tours, for type punches made for him (Ernest Coyecque, *Recueil d'actes notariés relatifs à l'histoire de Paris et de ses environs au XVI<sup>e</sup> siècle* (Paris, 1905-24), doc. 5439). These were apparently for the italic used at the private press directed for him by his nephew Nicolas Le Riche. See André Jammes, 'Un bibliophile à découvrir, Jean de Gagny', *Bulletin du Bibliophile* (1, 1996), pp. 35-80.

123 – note 5

Vervliet's study of 1967, dealing with the non-Latin types of Robert Granjon, was published in a revised and enlarged English translation as, *Cyrillic and oriental typography in Rome at the end of the sixteenth century: an inquiry into the later work of Robert Granjon 1587-90* (Berkeley: Poltroon Press, 1981). On Granjon's italics, note also H. D. L. Vervliet, 'The italics of Robert Granjon', *Typography Papers*, no. 3 (Department of Typography & Graphic Communication, University of Reading, 1998), pp. 5-59.

128 – Sites of printing in 1476

This map should include Cracow, Poland, where the *Almanach Cracoviense* (GKW 1303, Bibliotheca Jagiellónska, Cracow) was printed in 1473.

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Constance Meade was a benefactor of the 'Sanctuary of Printing' created at the University Press, Oxford, by John Johnson (1882–1956), printer to the university, to house his collection of ephemeral printing, and in gratitude he gave it her name. 'The John Johnson Collection', as it has been more generally known, was transferred to the Bodleian Library in 1968. The right-hand title page in fig. 84, Quintus Curtius Rufus, *De rebus gestis Alexandri Magni*, has the imprint, 'Lugduni, apud Seb. Gryphium, 1545'.

A VIEW OF  
EARLY TYPOGRAPHY  
UP TO ABOUT 1600



Q <sup>ms</sup> ll β Lek <sup>slip</sup> p j v a Q K X n et  
 us s I P A E P g G M M n s s n  
 z z u l fl c ffl si D A e a o s p s p  
 æ O R R H Z B C S F N N  
 V Y T <sup>slip</sup> s t y y x fl J P o fi <sup>slip</sup>  
 § fr t i j j f ff g v sl m st d g h i  
 t b r e s <sup>slip</sup> Ascendrica Curs

Smoke-proofs made in 1953 of the punches for the Double Pica Italic cut by Granjon for Plantin in 1570 (Museum Plantin-Moretus, ST 25). Some of the letters are upside-down.

A VIEW OF  
EARLY TYPOGRAPHY

UP TO ABOUT 1600

BY

HARRY CARTER

THE LYELL LECTURES 1968

OXFORD  
AT THE CLARENDON PRESS  
1969

*Oxford University Press, Ely House, London W. 1*

GLASGOW NEW YORK TORONTO MELBOURNE WELLINGTON  
CAPE TOWN SALISBURY IBADAN NAIROBI LUSAKA ADDIS ABABA  
BOMBAY CALCUTTA MADRAS KARACHI LAHORE DACCA  
KUALA LUMPUR SINGAPORE HONG KONG TOKYO

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*I acknowledge gratefully permission to reproduce photographs of books and documents from the British Museum, the Bibliothèque Nationale, the Library of the Vatican, the Bodleian Library, the University Library, Cracow, the Museum Plantin-Moretus, and the Folger Shakespeare Library, from Messrs. Longmans, Green & Co. Ltd. for Fig. 1, and from the Gutenberg-Gesellschaft for Fig. 16, as for the loan of photographs by Messrs. Joh. Enschedé en Zonen, Dr. Giovanni Mardersteig, and the Printer to the University of Oxford.*

H.C.



## ABBREVIATIONS USED FOR REFERENCE

B.M.: (Library of the) British Museum.

B.M.C.: *Catalogue of Books printed in the XVth Century now in the British Museum*, Parts i (1903)–ix (1962).

Baudrier, *Bibliographie lyonnaise*: H.-L. and J. Baudrier, *Bibliographie lyonnaise* (Lyons and Paris, 1895–1923), with the *Tables* by G. Tricou (Geneva and Lille, 1950).

Bibl. Nat.: Bibliothèque Nationale, Paris.

Bodl.: Bodleian Library, Oxford.

Burger: K. Burger, *Monumenta Germaniae et Italiae typographica: Deutsche und Italienische Inkunabeln in getreuen Nachbildungen* (Berlin, 1892–1913).

CA: M. F. A. G. Campbell, *Annales de la typographie néerlandaise au XV<sup>e</sup> siècle* (The Hague, 1874) and Supplements (1878–90).

Constance Meade Collection, Oxford: a collection made by the late John Johnson, formerly housed in the University Press, now in the Bodleian Library.

Coyecque, *Actes*: E. Coyecque, *Recueil d'actes notariés relatifs à l'histoire de Paris et de ses environs au XVI<sup>e</sup> siècle* (*Histoire générale de Paris, Collection de documents publiée sous les auspices de l'édilité parisienne*. Paris, vol. i, 1925; vol. ii, 1923).

De Ricci: S. de Ricci, 'Catalogue raisonné des premières impressions de Mayence (1445–1467)', *Veröffentlichungen der Gutenberg-Gesellschaft*, viii, ix (Mainz, 1911).

Duff: E. G. Duff, *Fifteenth Century English Books* (Bibliographical Society Illustrated Monographs No. xviii, 1917).

Enschedé, *Fonderies*: Ch. Enschedé, *Fonderies de caractères et leur matériel dans les Pays-Bas du XV<sup>e</sup> au XIX<sup>e</sup> siècle* (Haarlem, 1908).

Hain: L. Hain, *Repertorium bibliographicum* (Stuttgart, 1826–38).

Harvard, *French 16th Century Books*: Harvard College Library, Department of Printing and Graphic Arts, *Catalogue of Books and Manuscripts, Part i: French 16th Century Books*, compiled by R. Mortimer (Cambridge, Mass., 1964).

- Le Bé Memorandum*: [Guillaume II Le Bé] *Sixteenth-Century French Typefounders: the Le Bé Memorandum*, ed. H. Carter (Paris, André Jammes, 1967).
- Museum Plantin-Moretus, Arch.: archives of the Museum Plantin-Moretus, Antwerp.
- NK: W. Nijhoff and M. E. Kronenberg, *Nederlandsche bibliographie van 1500-1540* (The Hague, 1900-23), with supplements.
- 'Plantinian Inventories': M. Parker, K. Melis, and H. D. L. Vervliet, 'Typographica Plantiniana, ii: Early Inventories of Punches, Matrices, and Moulds in the Plantin-Moretus Archives', *De Gulden Passer*, 38 (Antwerp, 1960), pp. 1-139.
- S.T.C.: *A Short-Title Catalogue of Books printed in England, Scotland, and Ireland and of English Books printed Abroad, 1475-1640*, compiled by A. W. Pollard and G. R. Redgrave (1926).
- T.F.S.: Publications of the Type Facsimile Society: *Specimen of Early Printing Types reproduced in Collotype* (1900-9).
- Updike: D. B. Updike, *Printing Types, their History, Forms, and Use*, 3rd ed. (Cambridge, Mass. and London, 1962).
- Weale-Bohatta: W. H. J. Weale, *Bibliographia liturgica: Catalogus Missalium ritus Latini ab anno 1475 impressorum*, ed. H. Bohatta (1928).

## INTRODUCTORY

TYPOGRAPHY, the subject dealt with in these pages, is regarded as contributing to the study of bibliography by the University's statute regulating the five James P. R. Lyell Lectures given every year at Oxford. So far, I think it is fair to say, only those bibliographers who specialized in the incunabula have paid much attention to type; but lately there have been signs that others concerned with books of a more recent time have come to appreciate its value at least as an indication of the origin of a piece of printed matter. A typographer should give them all the help he can.

As compared with bibliography of the modern analytical kind the study of type historically considered has been amateurish. People have written about post-incunabular types because they liked them and thought them beautiful. They concentrated attention on typefaces that were the best of their kind. This is like bibliography in the time of Dibdin: we must try, without taking the delight out of the subject, to modernize it. That we can do by applying, broadly, the methods of the incunabulists to the later phenomena.

It is a matter of being able to distinguish typefaces and label them, an aim that is far from being within our range at present. However, typographers are beginning to realize that they must furnish the more general kind of bibliographers with the most accurate distinctions and labels that they can in the present state of knowledge, and do that for all types, not just their favourites. A big step forward has been made in identification of the sixteenth-century types of the Low Countries by Dr. Vervliet in a new book;<sup>1</sup> the series of volumes being published under the aegis of the city of Paris expanding Renouard's list of the books printed

<sup>1</sup> H. D. L. Vervliet, *Sixteenth-Century Printing Types of the Low Countries*. (Amsterdam, 1968).

there in the sixteenth century<sup>1</sup> will be a help, and so will the reproductions of typefounder's specimens with notes by various hands edited generally by Mr. John Dreyfus.<sup>2</sup>

Since the last of these lectures was given Stanley Morison has died. Typographers of my generation learned largely from him (and if typographical history is considered in this country as worthy of academic notice, it is mainly because he made it so), therefore it is difficult in discussing the history of type or lettering of any kind not to feel overwhelmed by his authority and to escape from seeing things through his eyes. In one of his last essays, 'On the Classification of Typographical Variations', he traces the development of a scientific approach to the description and classification of letters in print and in written hands, giving proof of his remarkable erudition. Towards the end of it<sup>3</sup> he quotes Professor Fredson Bowers as saying that in describing books 'the most intensive bibliographies may add a note on the typography', and that in such a note 'the type used in the text, whether roman, italic, or gothic, is given'; 'when possible [Professor Bowers adds] this type should be identified by reference to books on printing types, but for books of this period [meaning of the sixteenth century] precise identification is usually difficult'.

On this Morison comments:

It will be perceived from these paragraphs that Professor Bowers is not incorrect in saying that the 'precise identification' of a given fount of type is 'difficult'. The information extractable from existing reference books on 'printing types' is less than adequate to the strain Professor Bowers would like to put upon it. There is no 'Descriptive Principles of Typography' as an equivalent to Professor Bowers's *Descriptive Principles of Bibliography*. We do not even have a monograph on the body sizes of type, or the faces cast upon them, in the sixteenth century and later; we know little of the origin, and still less of the history, of the habit of casting a large face on a small body. . . . We have no documenta-

<sup>1</sup> *Imprimeurs et libraires parisiens du XVI<sup>e</sup> siècle: Histoire générale de Paris. Collection de documents publiée sous les auspices de l'édilité de Paris*, vol. i (Paris, 1964).

<sup>2</sup> *Type Specimen Facsimiles, Reproductions of Fifteen Type Specimen Sheets issued between the Sixteenth and Eighteenth Centuries*, ed. J. Dreyfus (1963).

<sup>3</sup> In *Type Specimen Facsimiles*, at p. xxviii.

tion on the development of type design consciously viewed as the means of reducing the real space occupied by the letters while maintaining their apparent size; we have no study of the competition, expressed in terms of type design, in the Bible trade of the sixteenth and seventeenth centuries. The creation of types for the use of newspapers (as distinct from newsbooks) has not been investigated. We need to know the precise sources from which matrices for the types, or the means by which parcels of cast type, reached London and the universities in the Elizabethan period. The steps by which 'black-letter' was abandoned in favour of 'Roman' have not been traced. These are only some of the typographical and historical questions that await treatment.

But in between the scepticism of a Bowers about being able to nail down a typeface in black and white and the complete solution to the problem postulated by a Morison, systematic, precise, and based on rational principles, there is a middle way along which I hope to go in these lectures, offering solutions, partial and tentative, occasionally.

Morison, it will be observed, scarcely addressed himself to the question put by Bowers, how can I tell in what type this book is printed? He took it as his cue for drawing attention to gaps in knowledge of typography that he specially wanted to be filled. An answer to the question could only be given if there were a coherent, well-organized, and well-documented body of knowledge about type from its origin until now. How far have we gone towards it? That is my theme. Rather than say we do not know this or that I had better attempt an outline of what we think we know. The gaps will be apparent, and if lecturing would tempt people with specialized knowledge to narrow them or improve on my account in other ways, it would be justified.

I think a typeface is sufficiently identified if the name of the man who cut the punches for it is known, if it can be named by the conventional body on which it was meant to fit, and if the style of the face can be described by one of the adjectives commonly used by palaeographers, palaeotypographers, and neotypographers.

I am aware that this is not the way in which incunabulists have worked until now with such good results, given the special objects of their study. Their aim is to differentiate, to separate as many unlikes as they can with a view to finding the slightest evidence of a variety of printers, places, and times. The typographical historian is concerned to group typefaces, to find resemblances, to depict printers' letters moving from time to time, from place to place, to fit their history to histories of more general or different scope, to make sense.

## THE TECHNICALITIES OF TYPE

TYPE is something that you can pick up and hold in your hand. Bibliographers mostly belong to a class of people for whom it is an abstraction: an unseen thing that leaves its mark on paper. For their convenience it has long been the practice to talk about a typeface, meaning, not the top surface of a piece of type, nor even of many pieces of assembled type, but the mark made by that surface inked and pressed into paper.

That usage had got so far by 1683 that Joseph Moxon, considering the necessary equipment of a master printer, lists the several bodies (or sizes) of type and goes on: 'These aforesaid *Bodies* are commonly *Cast* with a *Romain*, *Italica*, and sometimes an *English* [he means Black Letter] *Face*.'<sup>1</sup> Nowadays we successors to Moxon divide the scripts such as Roman and Italic into designs, Caslon, Bembo, Cheltenham, and call them faces or typefaces, and speak of a good face, a light face, and a bold face.

So the face comes loose from the metal, especially among those who do not handle or often see it. Nevertheless there are times when it is important to remember that a 3-dimensional thing carries it, and that there are other things that matter about type. Therefore I devote the first of these lectures to primitive typefounding. What I have to describe extends in time from about 1440 to about 1900.

The earliest trustworthy account of the making of type is in *Dialogues françois pour les ieunes enfans*, a little book issued from Plantin's press in 1567 without an author's name—at once a French reader and a children's encyclopaedia written in the form of dialogues between G, the editor, and experts in their subjects. G probably stands for Jacques Grévin and E, who discusses

<sup>1</sup> Joseph Moxon, *Mechanick Exercises*, ii (1683-4), sect. 2, para. 2.

printing with him, probably is short for Estienne (any Estienne), one of the famous family of printers, in whose name Plantin himself speaks.

When they come to printing G says:<sup>1</sup>

Let us begin with the letters, since you set them first. How are they made?

E. First they make the punch, a long piece of steel with whatever letter is wanted cut or engraved on the end.

G. What is the object of that?

E. When it is finished they strike it in copper and so make a matrix, which is simply an impression of the letter that has been struck in, like the mark made by a seal in sealing wax.

G. Of what use is the letter struck like that in copper?

E. It is useful, because the metal for making type, lead or tin, is poured into the matrix in a mould.

G. I understand so much; but I should think it is very difficult to make the letters exactly alike in size so that they fit together side by side accurately.

E. That is done by means of the mould, an assemblage of several parts, which makes all the letters alike, being, as they say, of one fount.

G. So the mould may have a matrix at one time for an A, at another for a B, fitted to it, and therefore the A and the B are made of the same size?

E. Just so.

They go on to discuss the parts from which the mould is made. E mentions the wooden clothing with a spring fastened in it, the bottomplates, the carriages, one with a wire on it, and then the bodies, the gauges, the registers, the jets, gallows-piece, and stool, all of which are fairly easy to see in the plate made for the *Encyclopédie* about 1750 (Fig. 3), as they are in Prechtl's *Technologische Encyklopädie* of 1850 and many other books up to and including Legros and Grant's *Typographical Printing Surfaces* of 1916.

<sup>1</sup> *La premiere et la seconde partie des Dialogues françois pour les ieunes enfans* (Antwerp, Plantin, 1567), p. 236. There is a facsimile reproduction in *Calligraphy and Printing in the Sixteenth Century*, ed. Ray Nash, 2nd ed. (Antwerp and Lunenburg, Vermont, 1964).



We leave Plantin and his friend in 1567 talking about the sizes and kinds of type that printers must have and the characters that make up a fount.

I like Plantin's introduction to typefounding: it makes it sound so easy. To the technical historian it is reassuring: it shows that the tools, and therefore the methods, in use by the middle of the sixteenth century were those remembered by older men in the trade today. Obviously, however, it is not only a rudimentary but also in some respects a defective account of the matter. To speak of typemetal as 'lead or tin' is wrong. Type cannot be cast in pure lead and not satisfactorily in unalloyed tin. Plantin knew better: his accounts show that he bought not only lead and tin, but antimony, copper, and iron filings as well to make metal.<sup>1</sup> His expression 'lead or tin' is very likely a relic of the secretiveness of early typefounders; and where the composition of typemetal is concerned it lingered on into modern times.

Plantin's exposition of the mould leaves out the most important thing that distinguishes the typefounder's from any other mould, the fact that it is adjustable for width of opening. Printers never were satisfied to adopt the uniform sideways shift of the typewriter, which necessitates squeezing the capital W and expanding the small i and l so as to occupy the same room: the punchcutter's small m fixes the spacing to be given to all the upright strokes in the fount. Gutenberg was insistent on this: he had alternative forms made for certain letters to avoid their standing too far from adjoining letters in awkward combinations. So he was faced by a problem of making letters uniform in two dimensions and varying in the third, or as typefounders say, of the same body and height-to-paper but different in thickness.

The solution to the problem is the mould made of separate halves such that when they are put together they will slide parallel one against another. The caster's grip closes the aperture as far as the matrix allows. The width given to the matrix determines the thickness of the casting. That simple and ingenious solution made typographical printing possible. Theodore Low De Vinne was

<sup>1</sup> Museum Plantin-Moretus, Arch., vol. 3, fol. i-iv\* (1563).

warranted in writing: 'He was the inventor of typography, and the founder of modern printing, who made the first adjustable type-mould.'<sup>1</sup>

Plantin's enumeration of the parts of this tool is enough to identify it with the one we know. There is a picture of it, indistinct but recognizable (Fig. 7), in a book printed even before his *Dialogues*, in 1545, by Joos Lambrecht at Ghent, who was a punchcutter and typesetter as well as a printer, a poet, and many other things.<sup>2</sup> A caster in the background is holding the familiar type of mould in his left hand and pouring molten metal from a pot over a furnace into it. The wooden clothing of the mould to save his hand from heat and the steel spring clipping the matrix in position are clearly indicated. He is sitting down, but otherwise he is just like his counterpart of recent years.

It is necessary to supplement what has been said about the mould by pointing out that normally one mould casts only type of a given body, a Pica, perhaps, or a 12-point in recent times, and another was used for a Great Primer or a Brevier. In the earliest times there were no standards for body such as these, and the mould was made to fit a set of matrices. Plantin knew his moulds by the names of the faces that they were meant to cast, but late in life he was making efforts to get all of his faces that he named because of their size 'St Augustin' or 'Text', for example, cast on what he called the 'true' body for a face of that description.<sup>3</sup> There is reason to think that he was a pioneer in so doing: he was likely to be, because his equipment was exceptionally large and varied.

His account books and papers piously preserved in his house at Antwerp, now the Museum Plantin-Moretus, supplement the information given about typesetting in his *Dialogues*. Moreover, in the same house is a big collection of punches and matrices, most of which can be identified by his inventories as having belonged

<sup>1</sup> *The Invention of Printing*, 2nd ed. (1877), pp. 66-7.

<sup>2</sup> Cornelis van der Heyden, *Corte instructie ende onderwys*, "Vermaen tot der ambachtsman". B.M., 843. e. 17(6).

<sup>3</sup> 'Plantinian Inventories', inventory of 1563 on pp. 15-17 and pp. 36, 55, 106, 118-19.

to him. There are also some old moulds, but they are unlikely to have been made until the seventeenth century.

The practice of this printer, who had a bigger business than any other of his time, or of any but recent times, was to buy matrices, or rough strikes from which matrices could be made, from artists who cut the punches and sold sets of pieces of copper struck with them. If he wanted to have the exclusive property in a type-face, he bought the punches as well. He sold large numbers of strikes to other printers, especially at the twice-yearly fairs at Frankfurt am Main, to which he went regularly chiefly to sell and buy books. There he also bought matrices and strikes from punchcutters who came to the fair from France. Frankfurt was privileged to have the right of deposit, so that merchandise could be left there in locked warehouses between the fairs,<sup>1</sup> and towards the end of his life Plantin kept most of his punches and strikes there. Once he sent a barrel full of them to Hamburg in charge of his grandson, presumably for sale to north-German and Scandinavian printers.<sup>2</sup>

The account-books show that Plantin had the finished matrices that he needed for his printing made from the rough strikes by skilled workmen at Antwerp or at Ghent, close by. The work is known in the trade as 'justifying', and it is difficult and laborious. On its proper performance depends the regular and even impression and generally the pleasing appearance of the face. However good the punches, the justifier can easily spoil their effect. The evenness of height-to-paper and spacing of letters, their true alignment, and their apparent uprightness (or in the case of Italic, their apparently uniform slope) is effected by work done on the matrices. It is not a matter of mere mechanical accuracy, because it has to compensate for optical delusions.

Plantin's founts of type were cast for him in his own matrices and moulds by the local typefounders. Some of these men were matrix makers too, and even punchcutters, and some were only

<sup>1</sup> B. Gebhard, *Handbuch der deutschen Geschichte*, 8th ed. by H. Grundmann (Stuttgart, 1954), ii, p. 395.

<sup>2</sup> Museum Plantin-Moretus, Arch., vol. 964, fol. 3. See H. Carter, 'Plantin's Types and their Makers', *Gedenkboek der Plantin-Dagen, 1555-1955* (Antwerp, 1956), pp. 247-69, at p. 264.

casters. Plantin never had a typefoundry, but he found it necessary to make typeset metal for a time.<sup>1</sup> The procuring of metal must have been a difficulty for the small men who undertook casting. It was usual for printers to pay them partly in old type which could be melted down to make new. However, when it is melted old type loses some of its more valuable ingredients: they are oxidized and come off as dross. It was necessary to add newly smelted metals. The refining of antimony to a state in which it would mix with the other components was an arduous business, needing great heat.<sup>2</sup> Tin and antimony had often to be brought from far away.

The picture of typefounding in the third quarter of the sixteenth century that Plantin affords us probably represents fairly the practice in a large centre of printing. The capital cost fell almost entirely on the printer. He had to stock matrices and moulds and might have to find the metal. The know-how, the ability to organize a good equipment of type, was part of his business, and by no means common property. The typefoundry as it became in the seventeenth century, where all these operations were financed and carried out and where the printer only had to go to be offered a choice of type in any quantity he liked, did not yet exist, or rather the earliest examples at Frankfurt, Paris, and Ghent were just beginning to build up their stocks.

Printers financed and organized the making of type, but they took no other part in it. The tasks of cutting punches, striking and justifying matrices, mould-making, and casting were separate from printing and done by independent contractors. They needed great skill and experience and could only be done economically after a long specialized training. They were carried on individually or combined in various ways; punchcutters seem generally to have struck, and often to have justified, matrices;<sup>3</sup> some typefounders

<sup>1</sup> *Gedenkboek der Plantin-Dagen, 1555-1955*, at p. 265.

<sup>2</sup> 'Labour would make Hercules sweat': Moxon, *Mechanick Exercises*, ii, sect. 18, para. 2.

<sup>3</sup> Frans Raphelengius the younger promised Jean Moretus to get Judocus Hondius to strike a Black Letter with punches cut by Hendrik van den Keere when Hondius next came to Leyden from Amsterdam: Museum Plantin-Moretus, Arch., vol. 92, fol. 113 (15 March 1601).

whose trade was mainly casting were famous for justifying or making moulds.

Punchcutters in the late sixteenth century were so few that to generalize about them is difficult. Plantin dealt with the best of them in Paris and the Netherlands, and there is little sign of the production of new typefaces elsewhere at that time. Of the most famous, Claude Garamond of Paris (b. c. 1495, d. 1561), it is known that he had the matrices for the Greek types that he cut to the order of King Francis I justified by a workman called Paterné Robelot, who was clever at it,<sup>1</sup> but it is likely that the master himself, whose types were used in many cities during his lifetime, did it too. Plantin bought matrices for forty faces cut by Robert Granjon of Paris and Lyons (b. 1513, d. 1589), often two or three sets of strikes from the punches and once as many as eleven.<sup>2</sup> When he commissioned new faces from Granjon he stipulated for one set of matrices to be justified; so Granjon, who was visiting Antwerp, must have been a justifier as well as a cutter.<sup>3</sup> Guillaume Le Bé of Paris (b. 1515, d. 1598) said that he made and sold matrices for the types that he cut and moulds to fit them.<sup>4</sup> Plantin bought a strike for a Greek face from Pierre Haultin of Paris in 1567 for sale at the Frankfurt fair to a German printer, who must have had it finished in Germany.<sup>5</sup>

As for the Antwerp artists whom he patronized, François Guyot (active from c. 1539, d. 1570) offered justified matrices and moulds for his types in notes written on a surviving specimen of his work (Fig. 67);<sup>6</sup> and Ameet Tavernier (c. 1522–70) testified before a tribunal of inquiry in 1566 to having ‘often cast’ one of his Italics and selling three sets of matrices for it to Antwerp printers, one to Haarlem, five or six to Frankfurt, and, he believed,

<sup>1</sup> *Le Bé Memorandum*, p. 18.

<sup>2</sup> Of the *Jolye Italicque*: ‘Plantinian Inventories’, p. 73 (ST 30). Six sets are still at the Museum Plantin-Moretus.

<sup>3</sup> Museum Plantin-Moretus, Arch., vol. 31, fol. 86<sup>v</sup>–89; vol. 98, fol. 257.

<sup>4</sup> H. Omont, ‘Spécimens des caractères hébreux . . . gravés à Venise et à Paris par Guillaume Le Bé (1545–1592)’, *Mémoires de la Société de l’Histoire de Paris et de l’Île-de-France*, xv (1888), pp. 278, 279, 282–3.

<sup>5</sup> *Correspondance de Christophe Plantin*, i (ed. M. Rooses, Antwerp, 1883), p. 119.

<sup>6</sup> See *Type Specimen Facsimiles 1–15*, ed. J. Dreyfus (1963), No. 1.

'some to Emden'.<sup>1</sup> Hendrik van den Keere of Ghent, who was Plantin's only typesetter from 1569 until he died in 1580, justified matrices for him for his own faces and for those made by other punchcutters.<sup>2</sup> Sometimes he employed extra hands for it.<sup>3</sup>

Punchcutters were always scarce. Besides those I have mentioned as suppliers of Plantin there was one, Josse d'Estrées, working at Ypres about 1580, but his work has not been identified.<sup>4</sup> Plantin had a type from punches cut by Philippe Danfrie, an engraver to the royal mint in Paris,<sup>5</sup> and some ornaments by Jacob Sabon, the Frankfurt typesetter. Nicholas de Villiers and Nicholas Du Chemin, both of Paris, were also at work at that time.

That will give some idea of the way in which printer's type was made and supplied soon after the middle of the sixteenth century. As I said, the beginning of typesetting in the modern sense of the word is discernible about that time. They were essentially houses where matrices were stocked and men were employed to cast in them. In their earlier days typesetting also sold finished matrices and strikes of the faces for which they owned the punches.<sup>6</sup> Repeated striking damaged or broke the punches, so replacements were needed from time to time and the faces in common use are found in various states. These were enterprises demanding a fair amount of capital.

<sup>1</sup> M. Parker, K. Malis, and H. D. L. Vervliet, 'Typographica Plantiniana III: Ameet Tavernier, Punch-cutter (ca. 1522-70)', *De gulden passer*, 39<sup>e</sup> Jrg. (Antwerp, 1961), at p. 27.

<sup>2</sup> Museum Plantin-Moretus, Arch., vol. 42.

<sup>3</sup> *Correspondance de Christophe Plantin*, v, ed. J. Denucé (Antwerp and The Hague, 1915), p. 119.

<sup>4</sup> Prosper Verheyden, 'Over Ypersche boekdrukkers', *Tijdschrift voor boek- en bibliotheekwezen*, vii (Antwerp and The Hague, 1909), p. 69; cf. *Correspondance de C. Plantin*, v, p. 118.

<sup>5</sup> H. Carter and H. D. L. Vervliet, *Civilité Types* (Oxford, 1966), pp. 24, 62; E. Droz, 'La société Hamon, Danfrie & Le Royer (1561)', *Gutenberg-Jahrbuch 1965*, pp. 43-7.

<sup>6</sup> See *Type Specimen Facsimiles 1-15*, ed. Dreyfus, Nos. 1-5, 14; *Frankfurter Schriftproben aus dem 16. bis 18. Jahrhundert*, introd. by R. Diehl (Frankfurt a. M., Schriftgießerei D. Stempel, 1955), Nos. 9, 15, 16; [G. Mori] *Schriftproben deutscher Schriftgießereien und Buchdruckereien aus den Jahren 1479 bis 1840* (Frankfurt a. M., 1926), Nos. 6, 7, 103, 106-10, 116.

Given the character of industrial or technological development generally, there is reason to suppose that the specialized, industrialized, and capitalized establishments of the end of the sixteenth century for making and selling printing type were the culmination of a process that had gone on since the invention of printing. If we look backward we expect to see less specialization, less of the work done by groups continuously employed on one kind of labour, people doing more things in a small way in more places.

No doubt there is some truth in this, but I think such a generalization has less application to printing and typefounding than to most branches of handicraft. The fact is that most of the skilled trades involved in them were already well developed by the time that letterpress printing was thought of. Punches with letters and symbols cut in relief on the ends were used by coin and seal engravers and goldsmiths, the mechanical precision necessary for making matrices and moulds was also needed to make arms and armour or clocks and watches, pewterers made complicated castings in soft metal alloys. These skills were concentrated in large cities by the middle of the fifteenth century.

With some knowledge of mid-sixteenth-century technique and practice it may be possible to interpret the scarce earlier evidence so as to get an idea of typefounding in the previous hundred years. It was nobody's business to enlighten us. Vulgarization began with Plantin's little dialogue for children;<sup>1</sup> it was Moxon in 1683 who first described typemaking in detail;<sup>2</sup> and Fournier in 1764 who, one may say, dealt exhaustively with it.<sup>3</sup> An earlier attitude can be divined from a eulogy of the printer Johann Veldener in a colophon of 1476 describing him as a master of 'cutting, engraving in relief, pressing and stamping, as also in designing, fashioning, and whatever secret about the art is more closely hid'.<sup>4</sup>

As for the technique generally, I must say at the outset that I can

<sup>1</sup> Or, perhaps, with a passage in the *Pirotechnia* of Vanuccio Biringuccio (Venice, 1540), book ix, cap. vii, which is brief and not easy to understand.

<sup>2</sup> Joseph Moxon, *Mechanick Exercises on the Whole Art of Printing*, ed. H. Davis and H. Carter (1962), pp. 87-190.

<sup>3</sup> Simon-Pierre Fournier le jeune, *Manuel typographique* (Paris, 1764-6).

<sup>4</sup> *B.M.C.* ix (1962), p. liv.

find nothing in the documents on early printing or in the printing itself to negative the use from the first of punches, matrices, and moulds. Eminent authorities are on record as maintaining the opposite. In the eighteenth century some held that the earliest types were carved out of wood. John Eliot Hodgkin was one of those who made careful experiments to see whether such a thing was feasible,<sup>1</sup> and his account of them refers to the earlier experiments. Johannes Enschedé of Haarlem refused in 1765 to print Gerard Meerman's *Origines typographicae* because the author affirmed that the oldest types were wooden.<sup>2</sup> Others favoured the view that the earliest printers used type cut from brass. This was partly because the colophons of the incunabula so often state categorically that the printing was done in letters of bronze and partly because the type of the earliest dated book printed with movable letters, the Mainz Psalter of 1457, has such a beautifully crisp look that it seemed to many people unlikely that it was produced by casting. The application of the Latin word *aes* may be put down to a fondness for it of the pedants who wrote the colophons. There was a scarcity of classical Latin terms for metals and this had a Virgilian ring about it. The *Catholicon* of Balbus, first printed in 1460, gives the meaning of *aes* as metal. As for the Psalter the recurrence of defects in particular letters used more than once on a page is enough to show that the letters were cast.<sup>3</sup>

Just as *aes* can be misleading, so can the Latin words *chalcographia*, *chalcotypus*, and *chalcoglyphus*. They are apt to imply a connection with copper alloy, and it is not easy to tell why they were used of printers and typefounders. Cooper's *Thesaurus* of 1565 gives the English for *chalcographus* as 'A prynter',<sup>4</sup> and Froben was one who used the word to describe himself.

These words coupled with some big brass Roman capitals and leaden matrices struck with them (Fig. 8), which came to him from an old typefoundry, led Johannes Enschedé in the eighteenth

<sup>1</sup> *Rariora*, ii [1902], pp. 39-46.

<sup>2</sup> Ch. Enschedé, *Fonderies de caractères et leur matériel dans les Pays-Bas du XV<sup>e</sup> au XIX<sup>e</sup> siècle* (Haarlem, 1908), p. 2.

<sup>3</sup> Sir Irvine Masson, *The Mainz Psalters and Canon Missae, 1457-1459* (1954), p. 31.

<sup>4</sup> Thomas Cooper, *Thesaurus linguae latinae et britannicae* (1565).



century to contend that all the earliest types were made by cutting bronze punches and striking them in lead, and his opinion was maintained in recent times by his descendant Dr. Charles Enschedé.<sup>1</sup> Lead matrices for very big letters are not uncommon: Plantin had a set of them struck with steel punches (which also survive),<sup>2</sup> and there are a number of sets of them at Nordiska museet in Stockholm for big Roman and Fraktur faces, which, according to an eighteenth-century authority, were made with punches of brass.<sup>3</sup> It is understandable that lead was used, because to force a big punch deeply enough into copper needs great pressure. The lead matrices need very careful handling and get spoilt by oxidation after a time: nobody would think of making them for the smaller types, say up to Double Pica or a quarter of an inch, for which the punches are easy to strike in copper.

Nevertheless, the big brass letters preserved by Messrs. Enschedé at Haarlem are interesting. I have seen them used in a book printed at Lyons in 1533<sup>4</sup> and later in several printed at Geneva and at Frankfurt am Main, and I suspect that the so-called punches are castings reproducing punches of steel. Alphabets of brass letters too big to be conveniently cast as type were sold to printers, who reduplicated them as necessary by shallow castings in sand or plaster and used them on title-pages.<sup>5</sup> Jacob Sabon, typefounder originally of Lyons, later of Frankfurt, was given imperial privileges in 1575 and 1578 for his method of making these bronze letters,<sup>6</sup> and his name, Sabon, was used by German

<sup>1</sup> Ch. Enschedé, *Technisch onderzoek naar de uitvinding van de boekdrukkunst* (Haarlem, 1901); Enschedé, *Fonderies*, pp. 33-40.

<sup>2</sup> 'Plantinian Inventories', p. 87 (MA 9), p. 18 (ST 3).

<sup>3</sup> [C. F. Gessner] *Die so nöthig als nützliche Buchdruckerkunst und Schriftgießery* (Leipzig, 1740), p. 148. Mr. Christian Axel-Nilsson kindly let me see his draft for a history of the typographical collection at the museum in Stockholm.

<sup>4</sup> *Titi Livii Decades* (Lyons, Jean Frellon, 1553): title-page in Constance Meade Collection, Oxford.

<sup>5</sup> [G. Mori] *Die Egenolff-Luthersche Schriftgießerey in Frankfurt am Main* (Frankfurt a. M., Schriftgießerey D. Stempel 1926), p. 18; Albert Bruckner, *Schweizer Stempelschneider und Schriftgießer* (Basle, 1943), p. 86.

<sup>6</sup> R. Meldau, 'Reichsfreiheiten für den Frankfurter Schriftgießer Jakob Sabon 1575 und 1578', *Gutenberg-Jahrbuch 1935* (Mainz), pp. 205-12.

typesetters for a body of type bigger than the Canon, which was the largest cast in those days in typesetters' moulds. Models for such big letters cut in wood or cast in brass or lead were sold as late as 1780.<sup>1</sup> A printing surface was made from them by moulding in sand, and the shallow casting so produced was stuck on a solid body cast separately. Accounts rendered to Plantin by his typesetter at Ghent charge for reduplicating decorated initial letters in this way and making words of big letters as one piece.<sup>2</sup> So, where these outsize letters are concerned, you get reduplication of punches by mechanical means.

The most persistent and authoritative opponent of the theory that type has always been made by means of punches, matrices, and adjustable moulds was Gottfried Zedler, chief librarian of the Land of Nassau at Wiesbaden, who died in 1945. Throughout a long career Zedler maintained in his many writings that letterpress printing originated in Holland and that the letters were cast as lines in sand moulds made from patterns cut from thin plates of brass and that the earliest books printed in Germany were produced in that way. Zedler's belief was based on his scrutiny of early printing and his reading of the documents about Gutenberg. He attached great importance to the mention by witnesses in the lawsuit against Gutenberg at Strasburg in 1438 of an object held together by two screws which Gutenberg wanted to keep secret. This, Zedler thought, could only be an iron frame and wooden boards for casting a printing surface in sand.<sup>3</sup>

'Herr Oberbibliothekar Professor Dr. Zedler' was the chief object of a heavily sarcastic attack on academic theorists on this subject by Otto Hupp in 1929 in an article headed 'Gutenberg und die Nacherfinder'<sup>4</sup> (a title which loses in translation). Hupp, who had been apprenticed to his father's trade of a die-sinker and

<sup>1</sup> J. Moxon, *Mechanick Exercises on the Whole Art of Printing*, ed. H. Davis and H. Carter, 2nd ed. (1962), p. 371.

<sup>2</sup> Ibid. Van den Keere's 'Grosse Flamande' (Black Letter) and the capitals for his 'Grosse Romaine' and 'Castillane' (Redonda) were cut in wood for sand casting. The pattern letters exist at the Museum Plantin-Moretus.

<sup>3</sup> See his article in *Gutenberg-Jahrbuch 1928*, at p. 55.

<sup>4</sup> *Gutenberg-Jahrbuch 1929*, pp. 31-100.

general engraver, ridiculed an inclination to believe that type had ever been made by means other than punches and struck matrices. He pointed out that goldsmiths, engravers to mints, and metal workers of other kinds made steel punches for letters and struck them in softer metals and had done so before typographical printing was thought of. No other way of multiplying small letters so as to form a printing surface had such practical advantages or would have been so likely to occur to the mind of a mechanic in the fifteenth, or any other, century.

Hupp's argument, which had been advanced with less polemical force (and in English) by Theodore Low De Vinne in 1876, silenced his opponents; but there are still people who think that the mysterious Dutch 'prototypography' was done in some such way as Zedler described, and an eminent authority has lately postulated the use of engraved matrices.<sup>1</sup> It is possible to engrave a matrix with hand tools for a very simple symbol such as a hyphen but not for a letter, let alone an alphabet. An investigation of early typefounding led De Vinne to conclude: 'Printing type has always been made by one method'<sup>2</sup>—that is to say as it was made in 1877.

De Vinne, as I have said, regarded the mould adjustable for thickness as the essence of the invention of typographical printing. Does the evidence support his view that an instrument of the kind was in use from the beginning? If so, then steel punches and copper matrices justified for depth and width were used with it.

The oldest picture of a mould, that of 1545, comes to us with the authority of a typefounder,<sup>3</sup> and it is recognizable as the one we know. Plantin named its various features in his *Dialogue* of 1567. A year later quite a different kind of tool was illustrated in the *Ständebuch* of verses by Hans Sachs about mankind's various

<sup>1</sup> W. and L. Hellinga, *The Fifteenth-Century Printing Types of the Low Countries* (Amsterdam, 1966), p. 20 (of Veldener), p. 33 (of Braem).

<sup>2</sup> T. L. De Vinne, *The Invention of Printing* (1st ed., New York, 1876), 2nd ed. (1877), p. 66.

<sup>3</sup> i.e. the one in Cornelis van der Heyden, *Corte instructyede ende onderwys*, previously mentioned.

callings with woodcuts by Jost Amman (Fig. 10).<sup>1</sup> The caster is sitting and has resting on the flat of his left hand a pyramidal thing with a wooden base into which he is pouring molten metal with his other hand. More things like it are on a shelf. It is impossible to tell from the illustration how this instrument would have worked—that is to say how it accommodated a matrix and produced type of various thickness. It makes me uneasy to think that a slight misdirection of the ladle (which is far too big) or an overflow of the metal would have had serious consequences for the left hand, and I do not see how the thing could have been brought close enough to the metal pot to save the metal from cooling in the ladle. This is twenty-three years later than Joos Lambrecht's woodcut of an instrument that had neither of these disadvantages. I wonder whether Amman's is reliable.

The oldest description of a typefounder's mould that has come to light is in a book printed at Venice in 1540, *Pirotechnia* by Vanuccio Biringuccio, on the uses of fire, in metallurgy among other things.<sup>2</sup> It is very brief and not easy to expound with precision. Biringuccio describes an apparatus of part and counterpart made to take a copper matrix struck with a steel punch and with an adjustable opening. It might have been of the pattern known to Plantin. One thing Biringuccio makes clear: the type had to be cut and planed to the right height after casting. That is easy to believe because it is a common practice even now, but it may mean that type could not in those days be made to stand on cast feet.

Impressions from pieces of type lying on their sides in the forme tell a certain amount about early moulds.<sup>3</sup> The fifteenth-century examples have no nicks and nearly all have flat feet, indicating that the feet had been planed flat after casting. It was a refinement of typefounding when the jet through which the metal entered the mould was made narrower than the cavity

<sup>1</sup> Jost Amman, *Eygentliche Beschreibung aller Stände und . . . Handwerk* (Frankfurt a. M., 1568). B.M., C. 57.b.25.

<sup>2</sup> See M. T. Gnudi and C. S. Smith, *Of Typecasting in the Sixteenth Century* (New Haven, Conn., 1941).

<sup>3</sup> T. B. Reed, *A History of the Old English Letter Foundries*, ed. A. F. Johnson (1952), pp. 20-3.

beneath it, so that the casting had a neck at which it would always break. This arrangement made it possible to remove traces of the jet by planing with a narrow iron so that the casting was left with cast feet enough to stand on. A fount cast and dressed in that way is likely to be uniform in height. One authority dates this improvement as early as 1484, basing his opinion on type on its side in a Missal of that date.<sup>1</sup>

When it became normal to cast type with a nick in it to indicate which way up it should be set I do not know, excepting that Plantin in 1567 mentioned the wire in the mould which caused it.

It is recorded of a man named Kraft who worked in several Italian towns from 1476 onwards at 'filing and finishing punches and matrices for casting letters' that he 'made and assembled an instrument for casting letters for printing books'.<sup>2</sup> Stephan Arndes, later of Lübeck, made a mould while he was working at Naples in 1477.<sup>3</sup> We cannot tell what sort of moulds they made; but when we hear of moulds adapted for particular sets of matrices we know at any rate that any kind of *Sandgußverfahren* or casting of complete lines, if it ever was practised, had been left behind. The will of a Venetian printer of 1484 disposed of 'duas matres justatas litterarum et formas pertinentes',<sup>4</sup> a phrase so reminiscent of later inventories that it must mean 'sets of justified matrices with the moulds for them'. Similarly, in 1493 a journeyman goldsmith at Strasburg offered to justify a set of matrices for Bonifacius Amerbach of Basle and make a mould for them.<sup>5</sup>

The normal matrix (Fig. 6) is rectangular and, as I said before, is carefully justified so that the margins at the head and the two sides give the letter the desired alignment and distance from others put beside it. On either half of the mould is an abutment called a 'register' which is adjustable within limits and presses against the

<sup>1</sup> Adolf Tronnier in *Veröffentlichungen der Gutenberg-Gesellschaft*, v-vii (Mainz, 1908) at p. 62, reports an instance in the Cracow Missal of 1484.

<sup>2</sup> K. Haebler, 'Schriftguß und Schriftenhandel in der Frühdruckzeit', *Zentralblatt für Bibliothekswesen*, vol. 41 (Leipzig, 1924), at pp. 84, 85.

<sup>3</sup> G.-B. Vermiglioli, *Principii della stampa in Perugia* (Perugia, 1820), p. 63.

<sup>4</sup> Haebler, *op. cit.*, p. 94.

<sup>5</sup> *Amerbach-Korrespondenz*, ed. Hartmann, vol. i (Basle, 1942), p. 33, No. 24.

side of the matrix when the mould is closed. By altering the positions of the registers the caster can make the type thicker or thinner on one side or both. Having once set the registers to suit one matrix, he is able to cast the whole fount without further alteration if the matrices are well justified.

A departure from the norm of some old matrices is that they have no margins at the sides. In the sixteenth century those for casting music (Fig. 11) were made so that the lines of the stave extended right across the piece of copper with the consequence that type cast in them gave the appearance of joining up to make continuous lines. There is a set of matrices at the Museum Plantin-Moretus for a small Hebrew face<sup>1</sup> made in the same way so that it is possible to cast the letters without intervals between them; and Messrs. Enschedé had a set for a small Roman type used at Cologne in 1527<sup>2</sup> of which the same was true. Those matrices at Haarlem vanished a century ago, but in the eighteenth century Johannes Enschedé described them in detail and made experiments with casting two or three at a time side-by-side in the mould.<sup>3</sup> When the letters were cast singly, the registers of the mould formed the sides of the type near the face and it is impossible to see any peculiarity in the printed result; but a different setting of the registers made it possible to cast two or three letters joined together (Fig. 12). Evidently Johannes Enschedé guessed rightly the reason for making the matrices with no margins at the sides.

Grouped letters such as Enschedé produced in this way are found in early printing, especially if the style of typography imitated an informal script. If the groups were made from single punches and matrices, they could not vary; but variations of them in what is essentially the same typeface can be accounted for by different combinations of the matrices producing one piece of type. For example, the first typeface used at Oxford corresponds exactly in all but six of the single lower-case letters and five of its combinations

<sup>1</sup> MA 82d; see 'Plantinian Inventories', p. 45.

<sup>2</sup> Enschedé, *Fonderies*, pp. 29-32; A. F. Johnson, 'Some Cologne and Basle Types, 1525-57', *Gutenberg-Jahrbuch* 1939, p. 197.

<sup>3</sup> Enschedé, *Fonderies*, p. 30.

with one used by Ten Raem at Cologne,<sup>1</sup> and yet pages set by the two printers have a different look (Fig. 13). I think it is because Ten Raem used some 25 combinations that the Oxford printer did not, and the Oxford man had about 17 that were peculiar to him, and this affects the intervals between letters and makes them look unlike. But there need have been only one set of matrices for both.

Copper is very durable, and plenty of copper matrices made in the sixteenth century are in use still. Messrs. Enschedé have matrices in good condition for a type that was used in 1492 (Fig. 9), the 'English'-bodied Black Letter of Henric Pieterszoon de Letter-snijder of Rotterdam.<sup>2</sup> They embody late forms for some letters and were probably made early in the sixteenth century. They are exactly like those made sixty years ago.

If we know what matrices were like about 1500, we know pretty well what kind of punches struck them and the sort of mould in which they were fitted. The technique changed hardly at all in the succeeding 400 years; it was the organization of the work that advanced with the coming of industrialism.

One other thing remains to be considered: the typemetal. The sharpness and durability of type depend on a good metal. Existing pieces of type go back to the lifetime of Plantin, about 1580, Analysis of samples from his workshop, stuck in woodcuts that only he printed, gives 82 per cent lead, 9 per cent tin, and 6 per cent antimony, with a little copper. The modern standard for a hard typefounder's alloy is about 15 per cent tin, 25 per cent antimony, and 60 per cent lead with a trace of copper. It varies with the volume of the casting: small type needs more tin than big to make the metal flow into a small cavity. Some type found not long ago in Moravia, believed to be of about the same age as Plantin's, has much more tin in it; as much as 18 per cent in one sample.<sup>3</sup>

<sup>1</sup> Burger, 67.

<sup>2</sup> No. 1 in the firm's inventory, with its Lombard initials (No. 2). They also have matrices for a Great Primer Black (No. 3) which appears to be, in the main, the one (115-mm.) used in the *Vita Sanctae Lidwinæ* (Schiedam, 1498). See Enschedé, *Fonderies*, p. 28.

<sup>3</sup> V. Fialova, 'Ein Letterfund aus dem XVI. Jahrhundert in Kralice nad Oslavou', *Gutenberg-Jahrbuch* 1959, pp. 85-91.

Biringuccio in the book *Pirotechnia* of 1540 that I have quoted wrote that the metal used for type was three-quarters tin, an eighth lead, and an eighth antimony. It looks as though there had been a big change of practice during the sixteenth century. An impression that tin was the main ingredient in early type, and sometimes the sole ingredient, is conveyed by early documents and colophons. In 1471 a man starting a press at Foligno bought 113 lb. of tin in the form of letters;<sup>1</sup> a colophon of Anton Sorg of Augsburg dated 1476 proclaims that he had printed the book 'in letters of tin'.<sup>2</sup> There are later examples: in 1523 a group of printers in Paris agreed to print Journals of English use in five founts including a small type by Jacques Le Forestier of Rouen, 'which is made of tin';<sup>3</sup> and in 1556 the Jesuits' College in Rome bought 'letters of tin' for their press.<sup>4</sup> A fire at the monastery of Vadstena in Sweden in 1495 consumed recently installed printing-equipment, including 'literae stanniae in brevitura et textura' (tin type suitable for breviaries and service-books).<sup>5</sup>

A hope that the use of pure tin to make it might explain some of the baffling problems about early type would, I think, be illusory. The main objections to it are that it is expensive and that it offers not much resistance to bending, therefore it is unsuitable for very small or thin letters. A strong metal and one that shrinks least in cooling, and consequently reproduces the punch most faithfully, is one in which tin and antimony are fused in suitable proportions. The failure to achieve the fusion would explain the starved look of many early typefaces.

Moreover, lead is mentioned in some of the oldest records of typesetting. Gutenberg, while he was experimenting in Strasbourg, bought lead.<sup>6</sup>

<sup>1</sup> B.M.C., vi, p. ix.

<sup>2</sup> B.M.C., ii, p. 344. See Albert Giesecke, 'Das Schriftmetall Gutenbergs', *Gutenberg-Jahrbuch 1944-9*, pp. 53-65.

<sup>3</sup> E. Coyecque, *Inventaire sommaire d'un minutier parisien* (Paris, 1895), p. 13.

<sup>4</sup> G. Castellani in *Archivum historicum Societatis Jesu*, ii (1933), at p. 12.

<sup>5</sup> B. Kruitwagen, *Laat-middeleeuwsche paleografica, paleotypica liturgica, kalendalia, grammaticalia* (The Hague, 1942), p. 44.

<sup>6</sup> Aloys Ruppel, *Johann Gutenberg*, 2nd ed. (Berlin, 1947), p. 91.



## DIVERSITY OF LETTER-FORMS IN PRINT

WHY should it be so difficult to do what Professor Bowers thought would be desirable, if it were possible: to particularize the type used in a book? If you measure it, and find that 20 lines set in it take up, say, 85 mm., you restrict it to a class of a particular body—a property of a typefounder's mould. It remains to describe the face, which might be cast on a variety of bodies. I had rather name typefaces for size by the conventional body that would best fit them, Pica, Long Primer, Minion, and such,<sup>1</sup> than by numbers, qualifying these terms if necessary by adding 'large' or 'small'. Some time in the early part or the middle of the sixteenth century these names acquired fixed meanings. Until it becomes appropriate to use them it is safest to measure the face of a fount, which you can do if you have a powerful magnifying-glass and a fine scale and measure from the top of b to the bottom of p or the extent of an Italic *f*. This, called the gauge of the face, cannot vary.

Much the best indication of the character of a face of type is the name of the person who cut it. Concentrated in that is all manner of information as to place and time, circumstances and relationships on which a history can be built: the knowledge of who cut it enables one not only to describe a face of type, it makes it worth describing—fits it into the whole scheme of things. To

<sup>1</sup> See below, p. 127, for the relationship of these names to measurements of twenty lines in mm. A table of the 'Old Bodies' based on measurements of nineteenth-century moulds at the University Press, Oxford, with the approximately equivalent names in Dutch and French is given in S. Morison, *John Fell, the University Press, and the 'Fell' Types* (Oxford, 1967), p. 260. German, Italian, and Spanish names are given by L. A. Legros and J. C. Grant in *Typographical Printing Surfaces* (1916), pp. 70-1. A study of bodies used in England at an earlier time has been made by Philip Gaskell, 'Type Sizes in the Eighteenth Century', *Studies in Bibliography*, v (Charlottesville, 1952), pp. 147-51. For the late seventeenth century see Moxon, *Mechanick Exercises*, ii, sect. 2, para. 2.

associate a type with Jenson or Caslon is to give it a quality which many sentences would be needed to express in any other way if, indeed, words could do it.

However, a letter-cutter may work in a number of different conventions, and even if he can be identified there is no escaping the need to specify the kind of letter. The available terminology is inadequate.<sup>1</sup> For the Latin types a few family names, Roman, textura, bastarda, rotunda, have acquired reasonably fixed meanings, but they are not enough: there are many obviously different styles of Roman and textura, and the jargon used for naming them has little authority. The efforts of palaeographers to improve on the present nomenclature are very welcome to describers of type.<sup>2</sup> It is extraordinary that such an admirable work as the British Museum's *Catalogue of Books printed in the XVth Century* should label types simply G for Gothic, GR for Gotico-Roman, B for Bastarda, and R for Roman.

It is evident that in considering the face of a fount of type we are in a world of art, styles, difficulty of saying what styles, inherited forms, human hands; a humble art it may be, but not a mechanical proceeding or anything susceptible of scientific treatment.

Whoever makes letters for printers must know what sort of letters to make. The potentially limitless freedom of the punch-cutter is restricted by the nature of letters, which is conventional, and their function, which is to be instantly recognized. A punch-cutter may simply make the letters he likes best or he may be told what to do, but in either case he works to somebody's preconceived

<sup>1</sup> Cf. Carl Wehmer: 'In der wissenschaftlichen Literatur . . . man faßte sehr verschiedenartige Erscheinungen und komplizierte Entwicklungen unter wenigen und ungenauen Bezeichnungen zusammen, die einer feineren und historisch richtigen Interpretation nicht genügen konnten und können', 'Ne Italo cedere videamur', in *Augusta, 955-1955* (Augsburg, 1955), at p. 146.

<sup>2</sup> Especially the essays by G. I. Liefertinck and G. Battelli in *Colloques internationaux du Centre National de la Recherche Scientifique: Sciences humaines*, iv: *Nomenclature des écritures livresques du IX<sup>e</sup> au XVI<sup>e</sup> siècle* (Paris, 1954); G. I. Liefertinck, *Manuscrits datés conservés dans les Pays-Bas*, t. i (Amsterdam, 1964), especially pp. xiv-xvii and xv, n. 6; C. Wehmer, *Die Namen der gotischen Buchstaben* (Berlin, 1932); Hans Foerster, *Mittelalterliche Buch- und Urkundenschriften* (Bern, 1946); Joachim Kirchner, *Scriptura gothica libraria* (Munich and Vienna, 1966).

idea gained from the surrounding world. When printing began the man who had the task of shaping the master letters to be reproduced as type had to give them familiar forms. If printing had been concerned with multiplying inscriptions carved in stone, especially Greek inscriptions, early type-design would have been more easily explicable to modern minds.

In fact, it is not possible to tell what models were put before the punchcutters of the fifteenth century. As for the sixteenth, we can see that when Garamond cut the 'Royal Greeks' under guidance from Robert Estienne, beginning in 1540, he followed the handwriting of a contemporary, the king's Greek copyist Angelos Vergetios.<sup>1</sup> Wolfgang Fugger, publishing a writing manual at Nuremberg in 1553, thought that his models, small woodcuts, would be of use to cutters of letters for printers.<sup>2</sup> It was not until his working life was well advanced, in 1573, that Guillaume Le Bé made enlarged 'portraits', as he called them (Fig. 14), of the Hebrew characters that he had been cutting for thirty years<sup>3</sup>—the first enlarged models, so far as we know, for any letters but Roman capitals, which were drawn big mainly for the benefit of architects. Big letters to be reproduced small by punchcutters appear to be a modern expedient, and it is safe to assume that handwriting or, in a few instances incised lettering, was the model for the earliest types.

Accomplished and elaborate penmanship would be easiest to reproduce by engraving: it needed the least interpretation by the engraver. Good models were the expert chancery scripts which served for the German Fraktur and Italian cursives of the early mid-sixteenth century. The rather primitive copying hands which it was thought necessary to imitate in the fifteenth century produced typefaces which gave way after a fair trial to more carefully formed letters.

<sup>1</sup> Philip Hofer and G. W. Cottrell, 'Angelos Vergetios and the Bestiary of Manuel Phile', *Harvard Library Bulletin*, viii (Cambridge, U.S.A., 1934), pp. 323-39; E. Armstrong, *Robert Estienne, Royal Printer* (Cambridge, 1954), p. 128.

<sup>2</sup> *Ein nützlich und wohlgegründt Formular mancherley schöner Schriefften* (Nuremberg, 1553), sign. K2<sup>v</sup>, H2<sup>v</sup>.

<sup>3</sup> Paris, Bibliothèque Nationale, MS. Nouv. acq. fr. 4528, fol. 14, 15.

What happened at the very beginning is best told in the words of the writer of the *Cologne Chronicle* of 1499 to this effect:

This most valuable art was first discovered in Germany at Mainz on the Rhine, and it is a great credit to the German nation that such ingenious men are to be found among them. And it took place in the year 1440, and from then on until 1450 this art and what appertained to it were being sought out. And in 1450, which was a golden year, they began to print, and the first book that was printed was the Bible in Latin, and it was printed with a big type like that used now to print Missals . . .

The chronicler ends his account by writing:

This beginning and progress of the aforesaid art were told to me orally by the worshipful master Ulrich Zell from Hanau, who is even now, in 1499, a printer at Cologne and it was he who brought the said art to Cologne.<sup>1</sup>

They made a type fit for Missals and used it for a Bible. A printer with only one type will want it to be suitable for the sublimest of texts. In typography the more formal script will tend to drive out the less. The operation of this law is slow and meets with many hindrances.

The Bible in Latin set in a big type like that used in 1499 for Missals fairly describes either the 42-line Bible finished at Mainz by August 1456 or the 36-line Bible finished later though perhaps begun earlier.<sup>2</sup> There is no reasonable doubt that the chronicler was referring to one or the other.

The formal Black Letter, the *textura*, is not merely a printer's letter, nor only a scribe's: it is the only form of the Latin alphabet that can rival Roman capitals for universality. Like them it can be

<sup>1</sup> *Chronica van der hilliger Stat van Coellen* (Cologne, J. Koelhoff the younger, 1499), at fol. 312<sup>v</sup>. Hain 4989. The passage is reproduced in facsimile by J. E. Hodgkin, *Rariora*, ii [1902], p. 230.

<sup>2</sup> Hain 3032, 3031; *B.M.C.* i, pp. 16, 17. A census of copies is given by Seymour de Ricci in *Catalogue raisonné des premières impressions de Mayence (1445-1467)*, *Veröffentlichungen der Gutenberg-Gesellschaft*, viii, ix, pp. 13-18, 25-36. For a recent change of ownership of one copy of the 42-line Bible, see John Carter, *Books and Book-Collectors* (1956), pp. 187-92.

rendered in any medium without looking as though it belonged to another, and like them it can be adapted to a variety of purposes in size, weight, extension, and polish. It is easy to teach and once learnt stays at the back of the mind like a Platonic form independent of a particular expression. I am thinking of the minuscules or lower case, for really the text hand had no capitals.

Whoever cut these letters on steel punches to make type had lived with them on monuments of stone or bronze, latten plates that we call brasses, on seals and coins, as well as in books, paintings, and stained glass. There was no need to give it a special typographical form.

Fortunately I am not called on to account for such a curious aberration as *textura* from the basic character of Latin minuscule. In his last days Stanley Morison was anxious to prove that it was connected with an ambition of the French kings to become emperors of the west. Delight in the power of the broad pen obliquely cut to produce contrast of fat and fine strokes, the fracture of what were curves, pressure on the nib making ornamental diamond-shaped excrescences—these things are found in the Frankish style of Hebrew as well as of Latin lettering.

The Mainz Bibles show the *textura* in a middle-Rhenish style, noticeable especially in the soberness and compression of the capitals (Fig. 21). The Dutch prototypographers (Fig. 15) made theirs of a more northerly fashion with more exuberant capitals and a tendency to what A. W. Pollard called 'fussiness'. Their typeface has no precedent in print and looks as though it were inspired at least partly by incised models. It has the hair strokes ending the terminals of final forms of *r* and *t* that are found in English and Flemish, and I believe north-German, monumental brasses and in Flemish paintings and glass, and the contraction signs are joined to the letters in the same way.<sup>1</sup> I cannot deny that these features are found in writing too.

<sup>1</sup> Stanley Morison, *Black Letter Text* (Cambridge, 1942), p. 27: 'The control, so to say, of lettering was in part taken out of the hands of scribes and shared by the inscription carvers and engravers working on altars, fonts, bells, tombs, brasses and memorials.'

The Mainz Missal types were used for other things besides Bibles—calendars, prognostications, and a papal warning of the danger from the Turks. Whether they were so used for want of better or other we cannot know; but it is evident that the *textura* was the appropriate idiom for children's lessons. The first lesson-book, the ABC with the essential prayers in Latin (Fig. 16), was set in *textura* in Germany and in the Low Countries.<sup>1</sup> There is a Dutch one of unknown date and provenance.<sup>2</sup> There are German examples too. The second school-book, the Latin grammar called *Donatus*, is known by many fragments printed in the Mainz Bible types (Fig. 17) and some in the Dutch *Speculum Printer's*.<sup>3</sup> It is said, by Istvan Hajnal,<sup>4</sup> that this kind of writing was dictated orally, penstroke by penstroke, in medieval schools.

Clerk was synonymous then with cleric, and children were taught to read and write so that they might serve the Church. It is understandable that they learned the script of the service-books. The use of *textura* for the ABC lasted quite late in many parts of Europe. In 1617 the Bishop of Antwerp's rules for schools in his diocese provided that gothic letters should be taught first;<sup>5</sup> and in England, Coote's *English School Master* put the alphabet in Black Letter before the Roman as late as 1636.

In passing it is worth noting that the ABC gave the alphabet in minuscule only, apart sometimes from capital A. The capital forms varied even in one place, and the same set could be used for types representing various degrees of formality. The practice common to scribes and printers of texts in formal gothic of using

<sup>1</sup> Georg Leidinger, 'Über ein Bruchstück eines unbekanntes Holztafeldruckes des XV. Jahrhunderts', *Gutenberg-Jahrbuch* 1928, pp. 32-42; Ernst Schultz, 'Das erste Lesebuch an den Lateinschulen des späten Mittelalters', *Gutenberg-Jahrbuch* 1929, pp. 18-30; see also *Gutenberg-Jahrbuch* 1938, p. 161.

<sup>2</sup> *Abecedarium* (CA 1) in the Frans Hals Museum at Haarlem. See Enschedé, *Fonderies*, pp. 1-6. Another fragment of the same kind, at Brussels, is reproduced in *Copy and Print in the Netherlands*, ed. W. Gs. Hellinga (Amsterdam, 1962), pl. 3.

<sup>3</sup> B.M.C. ix (Holland), p. xi.

<sup>4</sup> *L'Enseignement de l'écriture aux universités médiévales*, 2nd ed. (Budapest, 1959).

<sup>5</sup> V. de La Montagne, 'Schoolboeken te Antwerpen in de 17de eeuw', *Tijdschrift voor boek- en bibliotheekwesen*, 5 (Antwerp and The Hague, 1907), pp. 3-35.

the decorative uncials that we call Lombardic to begin sentences is another sign of the inessential role of capitals. Printers often had alternative forms for capitals in their founts, and as late as 1553 Wolfgang Fugger in his manual for writing gives three forms for each of them which, he says, are equally good for *textura* or *Fraktur*.<sup>1</sup> Plantin set Roman capitals with his biggest *textura* type,<sup>2</sup> and an unidentified press of the Low Countries used Roman capitals when setting Latin and some of uncial form when setting the vernacular, the lower case being the same for both.<sup>3</sup> It was the introduction of Roman type that taught printers the uses of capitals, and who knows to what extent the eventual supersession of gothic types is due to the weakness of their capital forms?

The first sign that *textura* was not acceptable for everything printed is the first dated piece of printing, the 31-line Indulgence (Fig. 18) of 1454-5.<sup>4</sup> It is a form—a form of agreement between an ecclesiastical lawyer and a person whose name had to be added in writing to procure for this person, being penitent, certain spiritual advantages in return for a subscription to the defence of Cyprus against the enemy of Christendom. The handwriting of the completion is the ordinary current script of that day; and it was in a script of that kind that ecclesiastical law clerks normally drew up agreements. The *bastarda* letter in which the body of the document is set might have been used for a charter in the mid-fifteenth century, but hardly for this.

This, our first introduction to a choice of typefaces, is interesting in many ways. Technically the *bastarda* type is very good. Although it represents writing less painstaking than the Bible faces, the punchcutter and typefounder have spent as much trouble on it as on them. The alignment and distances of the characters are impeccable, even though it meant kerning the *f* and long-*s* and several letters with the contraction-stroke over them to get them close enough to the following sorts. The height of the type is

<sup>1</sup> *Ein nützlich und wohlgegründt Formular*, sig. H4<sup>v</sup>.

<sup>2</sup> The 'Gros Canon flameng par Henry du Tour': 'Plantinian Inventories', p. 41 (MA 4).

<sup>3</sup> *B.M.C.* ix (Belgium), pl. IXB, sect. 1 IC 50150 and 50152.

<sup>4</sup> For the two Indulgences see *B.M.C.* i, pp. 15, 17. De Ricci, pp. 43-50.

regular, so that all of it prints clearly. These Mainz craftsmen were terrible ancestors for the typefounders, because a face that is not better than any made before it has no real reason for its existence. Matrices last indefinitely.

We have not yet quite lost the feeling that a script or a typeface must be appropriate to the matter set in it. A book face looks wrong in a newspaper, an average reader will say that he finds it easier to read a scientific book in one face and fiction in another. Tests of legibility point to its being dependent on subjective reactions. In civilizations that have not taken to typewriting there are generally three well-marked grades of the written hand. The Hebrew and Arabic have their counterparts to the *textura*, the *bastarda*, and the *notula*. The Mainz printer was evidently sure that an indulgence called for a script of the middle sort and that the *textura* face that he already had would do only for the incipit and exordia. I find the text face of the 31-line document pleasing—simple letters well drawn, combining easily, and of a comfortable degree of blackness. In these respects I like it better than the corresponding type (Fig. 20) of the 30-line edition of the same indulgence almost contemporary with the other. The design of the second is of a rather later fashion: the *f* and long-*s* lean forward and descend below the foot-line, the capitals are intricate in a late medieval manner, and there are sharp angles and fractured curves. It is true that this type is less well cut, justified, and cast; but allowing for that it compares badly with the other for grace and readability.

An expert palaeographer has called the 31-line type an 'idealized cursive'<sup>1</sup> and so has suggested that imagination enters into the design. What is interesting is that the designer's creative work took the form of going back in time to a rounder, smoother script and primitive uncial forms for capitals. The use of a mechanical means of reduplicating the form of agreement brought with it an opportunity to reproduce a better, clearer kind of lettering than a scrivener, working against time, would have adopted; and

<sup>1</sup> Arthur Wyss, 'Die neuesten deutschen Forschungen zur Gutenbergfrage', *Zentralblatt für Bibliotheksvesen*, 7 (1890), pp. 407-29, at p. 417.



what was conceived of as better was found in the past, in an old model.

This backward look is a recurring theme in the history of printers' letters. Maybe it is to be put down partly to an instinct in punchcutters to find forms that are fundamental and timeless. Their work is so slow and difficult, especially if they have to strike and justify, that, if they can choose, they will devote it to something that may prove permanent. The *bastarda* of the 31-line *Indulgence* is not the clearest instance of it; nevertheless the rotundity and simplicity of the design have caused some critics to see in it a hybrid, the first sign of Italian influence on German type. The preference of Italian humanists, declared by the end of the fourteenth century, for early-medieval letter forms is well known to us; we do not know what currents were running in Germany that might affect lettering. In learning generally Italian humanism hardly affects southern Germany before 1470. It is possible for a thing to be Romanesque but not Roman.

The Cologne chronicler implied a doubt whether the type used for the first printed Bible was suitable for it: 'a type like that used now to print Missals', he thought. His ideas of the sanctity of texts would differ from ours, Protestants as we are. The Latin Bible printed by Fust and Schöffer at Mainz in 1462<sup>1</sup> was in *this* type (Fig. 23), Mentelin at Strasburg a year or two earlier printed one<sup>2</sup> in this (Fig. 22), and his successor the R-Printer not more than ten years later<sup>3</sup> in this (Fig. 24). The third example, of about 1470, marks the arrival in Strasburg of the Italian humanist manner. The use of the *textura* in southern German printing was soon restricted to liturgies and school-books; in the north it was not. Thomas a Kempis copied the Latin Bible at the Agnetenberg on the east side of the Zuyder Zee in the years 1426-39 in a formal Black Letter.<sup>4</sup> His religious persuasion, the *Devotio moderna*, powerful in Low Germany and the Low Countries, resisted the erosion of gothic,

<sup>1</sup> *B.M.C.* i, p. 22; De Ricci, pp. 89-99.

<sup>2</sup> *B.M.C.* i, p. 51.

<sup>3</sup> *B.M.C.* i, p. 60.

<sup>4</sup> Hessischen Landes- und Hochschulbibliothek, Darmstadt, MS. 324; see H. Knaus, 'Windesheimer und Fraterherren: zwei Kölner Scriptorien des 15. Jahrhunderts', *Gutenberg-Jahrbuch* 1966, pp. 52-64.

and its schoolmasters and scribes, the Brothers of the Common Life, did much to prolong the use of late-medieval letters in secular as well as religious books. It may be owing to them that Dutch Bibles in Black Letter are still commonly used.<sup>1</sup>

The Low German and Dutch textura types were not comparable with those of Mainz for splendour: only the French can be said to have been as good or better. For the Mainz Psalter of 1457 a new pair of faces was cut of a design like that of the two Bible types but bigger and handsomer (Fig. 25). The cutting is masterly and the casting hardly less so. It is by no means easy to cast type as big as this in a hand-mould: air-bubbles cause flaws in the face and thick strokes sink in the middle as they cool. The typemetal must have been excellent and there must have been a rigid inspection and rejection of imperfect type.

There is more to admire than a technical triumph. The textura letter for one reason or another is unsurpassable for solemnity. It is no wonder that it kept its hold over liturgical printing for so long, or that when Roman replaced it after the Council of Trent it looked poor by comparison. For instance, a Mainz Cathedral Service-book of 1665 (Fig. 27) is a fine piece of printing.<sup>2</sup> The words of the chants are set in 'Le gras canon romain' cut for Plantin in 1573 by a most able punchcutter, Hendrik van den Keere of Ghent, for new service books.<sup>3</sup> Roman capitals lend themselves to all manner of treatments, but the minuscules have their proper thickness of stroke. If fattened, as here they had to be to be read by choirs in dimly-lit churches, their graces vanish.

Peter Schöffer and his son at Mainz went on using the Psalter types for Missals until 1520 or later. The chancery types of the two Indulgences do not reappear. What was needed next was a type for learned books, and in 1459 Fust and Schöffer printed the

<sup>1</sup> H. de La Fontaine Verwey in *Copy and Print in the Netherlands*, ed. W. Gs. Hellinga (Amsterdam, 1962), p. 26.

<sup>2</sup> *Hebdomadarium et commune sanctorum* (Mainz, typis C. Kuchleri, 1665). I owe an acquaintance with it to Mr. William G. Haynes, Jr.

<sup>3</sup> 'Plantinian Inventories', p. 73 (ST 6b, MA 1b); the 'Canon Romain' of Plantin's Folio Specimen of c. 1585. See a reproduction in *The Library*, 5th ser. xi (1956), facing p. 178.

Durandus<sup>1</sup> in a face that very greatly expanded the range of typography. The colophon is set in the bigger type of much the same design that we saw in the same printers' Bible of 1462 (Fig. 23). It was a book for clergymen and it was necessary to confront them with a kind of script to which they were accustomed in such texts and not so big or so clear as to affront their consciousness of being literate. It is the basic book hand of late medieval times, characteristic, so far as I can tell, of the fourteenth rather than of the fifteenth century, a northern rotunda with the two-storied *a* of that convention, a *g* made of two loops with an ear added, an *s* like a circle diagonally cut and badly fitted together again; *f* and long-*s* stand on the foot-line. Combined letters, abbreviations, and ligatures abound, as in books copied cheaply by hand for universities. But, compared with most types rendering this script, this has a certain gracefulness. The curves are round, not fractured, the capital forms are old and simple, and the distances between letters are ample enough to harmonize with the white counters inside them.

Handwritten examples somewhat like this are named by Dr. Liefstinck 'gothic text', *Litera [Gotica] textualis*.<sup>2</sup> They come from many parts of Europe, and are of the thirteenth and fourteenth rather than the fifteenth century, when writing had become more cursive. As soon as printing spread beyond Mainz, typefaces for this simplified gothic book hand spread with it.

To finish with the typefaces of the Mainz period of printing we should glance (Fig. 26) at the *Catholicon* dated 1460.<sup>3</sup> It reproduces a book script like that reproduced in the Durandus, though less artistically and with less proficient help from the typefounder—a good deal of the face of the *Catholicon* punches did not get to the paper. Both books are in type that is smaller than any made before: the Durandus in a large Pica and the other in a Small Pica. Nothing less than a Great Primer had been made previously. In both cases smallness seems to have dominated the punchcutter's

<sup>1</sup> Hain 6471; *B.M.C.* i, p. 20; De Ricci, pp. 74–80.

<sup>2</sup> In *Manuscrits datés conservés dans les Pays-Bas*, t. i, p. xiv, pl. 151.

<sup>3</sup> Hain 2254; *R.M.C.* i, pp. 39–40.

thoughts about the style of the letter. His aesthetic sense forbade him to render detail that was difficult to see. Penmanship is capable of much finer effects on this scale, and engraving of even finer; but it was in the nature of the gothic to use tools for what they did best. The punchcutters imagined themselves writing and refused to niggle.

Unlike Dr. Liefertinck, a good many authorities have classed this style of letter, written or printed, as only partly gothic. The German name *Gotico-antiqua* and the Latin-English *fere-humanistica* are often applied to the Durandus type in particular. It seems best to reserve these names for founts of type that in at least some of their sorts have been influenced by Roman inscriptional capitals. Until they adopted these even the Italian humanist calligraphers wrote gothic according to Dr. Ullman. The next departure in middle-Rhine typography was to introduce more late-medieval hands, the German *bastarda* in a form more northern than that of the *Indulgences* and the Italian *rotunda*. That disposes one to think that the Durandus cutter and others who followed him in giving more graceful curves and wider distances to the simplified book script than scribes normally did was guided by what Carl Wehmer calls 'the calligraphic hindsight (*Schriifthistorismus*) of the fifteenth century'.<sup>1</sup>

In an article of 1933 Wehmer, with the advantage of being both a palaeographer and an incunabulist, wrote of the types of mixed inspiration to this effect:

The German *Gotico-Antiqua* group is not quite one in its nature. Undoubtedly in the making of these types Italian models played a part; but to some extent it was only the tendency that was copied from Italy, the tendency to go back to early-medieval scripts. That being so, it was only the example that was Italian: the design and execution were German. Moreover, apart from aesthetics and awareness of past history, there was behind the adoption of *Gotico-Antiqua* types a purely practical but understandable desire to make once more a legible and simple book-script out of the gothic.<sup>2</sup>

<sup>1</sup> 'Zur Beurteilung des Methodenstreits in der Inkunabelkunde', *Gutenberg-Jahrbuch* 1933, pp. 250-325, at p. 305.

<sup>2</sup> *Ibid.*

In fact it was not so much the revival of the early medieval round hand that led to the printer's letter as it evolved just before 1500 as the introduction to typography of Roman capitals. The twelfth-century book script beloved of Petrarch and Edward Johnston and by all of us is not a printer's letter. It has been beautifully rendered in type and never better than in the founts cut for the Bremer Presse just before the First World War (Fig. 29). Even with capitals approximating to classical inscriptional forms, as in them, it is not only affected in its suggestion of penwork, it is difficult to read. It wants the rigid alignment and the avoidance of stress where it is not needed that the inscribed letter affords to the reading eye and that the engraver on steel can render. Even if the German punchcutters of the fifteenth century had been bolder in the light of their hindsight they would not have found in medieval penwork a script that could be simply transferred to print.

Students of calligraphy do not as a rule claim much for the fifteenth century. Monasteries were in a decline, rich patrons were interested rather in illumination and miniature painting than in script, and the new demand came largely from universities, which wanted economical texts. Looking lately at an exhibition of the library of Philip the Good, Duke of Burgundy from 1419 until 1467, I was struck by the coarseness of much of the writing put beside the most refined and imaginative pictures and decoration. Wehmer, it is true, argues for a renaissance of good penmanship in Germany towards the end of the century and thinks that the vigour and inventiveness of the scribes of that day have not been given due recognition.<sup>1</sup> More research and more vulgarization are needed; but Wehmer's few examples and those easily accessible elsewhere suggest that he was thinking of writing done in southern Germany under Italian influence right at the end of the century.

What was needed was a disposition on the part of printers and typefounders to discover a new aesthetic in metalwork. There are signs of it at Strasburg, where printing must be nearly as old as it

<sup>1</sup> 'Ne Italo cedere videamur', in *Augusta, 955-1955* (Augsburg, 1955), pp. 145-72, at p. 146.

is at Mainz and the effects of Italian humanism were felt very early. But not in the type of Mentelin's Bible (Fig. 22),<sup>1</sup> roughly contemporary with that of the Mainz Durandus. It is in much the same convention, apart from its cursive a; but it is pinched, and a comparison of it with the rubricator's written hand at the top makes me think that the printer wanted a letter like the scribe's but more economical of room: a mistake that printers make, for a letter pinched sideways claims more vertical spacing than the normal. It is, however, a gracious letter and may well indicate a nostalgia for the past.

The same beautiful handwriting is to be seen in the rubrics of a copy of Eggestein's edition of Gratian's *Decretal* of about 1471<sup>2</sup> in a type of more barbarous cut, looking like the work of a German goldsmith acquainted with Italian rotunda. This is some 12 years later than Mentelin's Bible, and it makes one think that as Italy exerted more pull on southern Germany it was Italian gothic as much as Italian humanism that the Germans admired.

Strasburg was liberal and open to foreign influences. Its letter-cutters were inventive and adventurous, and if they did not evolve a style peculiar to the place, it was, I suspect, because they were ready to cut any style of letter and they supplied punches far and wide in Germany, Italy, and even in the Netherlands.

As printing strays from its cradles at Mainz and Strasburg the influence of place becomes more evident. Cologne, the biggest of German cities, where printing began by 1466, was ruled by the clergy, its university was a defender of orthodoxy, Brothers of the Common Life were prominent among the scribes who copied books there. Looked at from our point of view, Cologne was content to be and remain in the late Middle Ages. At the same time it was a Hanse town with business interests over a great part of the world and in the book trade it has always been a force to be reckoned with.

The interest in the Cologne typefaces of the first fifteen years

<sup>1</sup> Hain 3033. I refer to the Type Facsimile Society's reproduction, 1909a, of the copy in the University Library, Cambridge.

<sup>2</sup> Hain 7883; *B.M.C.* i, pp. 67-8.

is mainly industrial or technical. As might be expected, the design at first is imported. Proceeding in letter-cutting from printed precedent had begun by this time. Ulrich Zell, the first printer, began with a face of the Durandus class (Fig. 32) which has a trace of southern liberalism in its width, its curves, and the shapes of its capital letters; perhaps he brought matrices with him from Mainz, where he learned to print, or ultimately from Strasburg. His second face, bigger and appearing a year later, is similar: the pair<sup>1</sup> may have been an imitation of the two used by Fust and Schöffer for book script. Printers at Cologne after Zell used similar types of a more decidedly gothic flavour, especially in the capitals for which there was a Low German tradition.

There is reason to think that typefounding in Cologne was, from the first, independent of printing.<sup>2</sup> Not only did many of its presses use the same types or founts of type that had sorts in common, but printers varied the sorts in their founts as time went on and exchanged their founts for new ones of the same face but on a different body. This is unlikely to have happened if every printer had owned his matrices and mould and points to a common source of supply constantly renewing a stock of matrices and enlarging the number of its moulds.

A Missal was printed at Cologne in 1483,<sup>3</sup> and the *textura* faces cut for it were given exaggerated terminals, in some texts diamond-shaped in others horizontal, which make them dazzling and rather ugly. At the same time, about 1465–80, the types of the basic book-script fashion give way in the books of scholastic philosophy and law to condensed types with the fractured curves and emphatic terminals of the *textura*, as in one (Fig. 30) used by Arnold Ther Hoernen.<sup>4</sup> It is a more formed script but not more formal: the *a* and *f* are generally of the *bastarda* convention. The making of these rather elaborate small types may be put down partly to a growing realization of the power of engraving to render

<sup>1</sup> *B.M.C.* i, pl. xix, Types 83 and 96.

<sup>2</sup> Severin Corsten, *Die Anfänge des Kölner Buchdrucks* (Cologne, 1955), pp. 47 ff., 66, 72.

<sup>3</sup> Weale-Bohatta 885. The types are reproduced in Burger, 69. See also *B.M.C.* i, pl. xxvi, Types 235, 158; T.F.S. 1909d.      <sup>4</sup> *B.M.C.* i, pl. xx, Type 100.

detail and so alter the visual scale of printed lettering in relation to written.

The example cited above is a page of a German-Latin vocabulary printed by Ther Hoernen in 1477.<sup>1</sup> The type is of a kind that flourished for about ten years in northern Germany and the extreme east of the Netherlands.

However, technical and economic considerations do not show much in the look of printers' letters. A tendency in Cologne away from the simplified forms for the alphabet must be ascribed mainly to a difficulty of getting the Low Germans to accept a style less painstaking and intricate than they were used to. The types of the nameless Printer of the *Speculum*, as we have been told, are 'fussy'. Where they originated is a hard matter, but it was within the province of Cologne. The city was the metropolis for a wide area difficult to describe in terms of modern political geography: the archbishop's ecclesiastical supervision extended over the low country from the borders of Saxony to Cambrai, and reflected an ancient grouping of peoples with cultural affinities. The university drew students from further afield.

A Cologne class of rather wretched types prevailed for a short time in this area until the printers of Holland and Brabant could express their own taste in letters. The pattern evolving in the northern metropolis of the book was followed at Oxford. The printer here used a Cologne face (Fig. 13) of the simple sort for his first three books and by 1481 had adopted another (Fig. 31) of a design prefigured by Ther Hoernen's of six years before.<sup>2</sup> The design found favour in the domains of the bishop of Utrecht at Zwolle and Hasselt and to some extent in the county of Holland. Further west, in Brabant and Flanders, the mixed style of Cologne did not prevail upon a fondness for the formal *textura* in secular as well as in religious books and a looped and flourished *bastarda*.

The founts of the Oxford printer, let us say Theodoric Rood of Cologne, present in an acute form one of the hardest puzzles of

<sup>1</sup> Hain 14513; *B.M.C.* i, p. 206; Bodl. MS. Junius 21.

<sup>2</sup> The two types are reproduced in E. Gordon Duff, *Fifteenth Century English Books* (1917), pls. xxxviii, xxxix.



early typographical history: the abundance of typefaces. How can they have been paid for? This press at Oxford produced fewer than twenty books, nearly all of them rare, and used seven different faces of type. A hypothesis that Rood cut the punches and struck and justified the matrices is too unlikely. If he had, he would not have had time to print. His first fount shares its sorts with those of several presses at Cologne and with Veldener's and Pafraet's in the Low Countries. It is possible to tell by the quality of the punchcutting that one man did not cut all seven faces. The first is respectable, the second is good, the others are incompetent. There is an attractive suggestion put forward lately that there was at Cologne a consortium of business men devoted to setting up printers and equipping them for export.<sup>1</sup> This company, one supposes, had a workshop for making matrices and lent sets of them to incipient printers. The Oxford man, I conjecture, had his first two sets from Cologne and then his credit there ran out and he had to turn to an inferior source of supply for the later faces. Jan Veldener went to Brabant and Guelderland from Cologne, and his first two types were almost certainly made there. His repertory, like that of the Oxford printer, varies in quality too much to be the work of one pair of hands. Richard Pafraet, the printer at Deventer, was from Cologne, and the smaller type of his first press has sorts also found at Cologne.<sup>2</sup> When his son and successor died, he left matrices, not punches, to his son.<sup>3</sup> If one may judge by the cut of their typefaces, other printers of the Low Countries, Pieter de Os at Deventer, Heynrici at Leyden, and the Brothers of the Common Life at Brussels, were furnished with matrices from the factory at Cologne.

In wealth and technical skills the south German cities outstripped those of the Rhineland while printing was in its infancy. One can

<sup>1</sup> W. and L. Hellinga, *The Fifteenth-Century Printing Types of the Low Countries* (Amsterdam, 1966), p. 18, quoting S. Corsten, *Die Anfänge des Kölner Buchdrucks*, as on p. 37, above note 2.

<sup>2</sup> Hellinga, p. 40.

<sup>3</sup> M. E. Houck and M. E. Kronenberg, 'Officieele bescheiden over Deventer drukkers in de zestiende eeuw', *Het Boek*, 20 (The Hague, 1931), pp. 241-52, at p. 248.

see that writing and letter-cutting were less tied there to medieval tradition. At Augsburg, Nuremberg, and Ulm, and at Strasburg, which was both southern and Rhenish, clerical influence was much less strong than at Mainz or Cologne. Prosperous citizens wanted books and many must have learnt writing from professional masters. The masters would have prided themselves on teaching novel fashions and ornate hands. Printed letters such as those of Mentelin at Strasburg of 1465,<sup>1</sup> have curious forms, especially for capitals, whether they are uncial, or classical, such as Zainer's of Nuremberg cut before 1473,<sup>2</sup> or mixed, like those of Husner of Strasburg about 1479.<sup>3</sup> The gothic types of Augsburg, Nuremberg, and Ulm are splendid examples of German fine metalwork; their strength and simplicity have inspired printer-aesthetes in recent times, particularly in Germany, but William Morris too. A letter such as that of Johann Keller of Augsburg about 1478<sup>4</sup> has the minimum of calligraphic quality, but the sharpness and boldness of its cut makes it impressive.

The first three Augsburg printers had been scribes; but scribes and writing masters seem unlikely to have dictated the forms of the more eccentric typefaces of southern Germany. Either much freedom was allowed to the artists who cut them, goldsmiths, perhaps, like Thomas Rüger who made punches for Schönsperger,<sup>5</sup> or else the printers themselves had begun to see a beauty in their craft which it did not owe to an older one. This is the view of Wehmer, who thinks that among these printers there were a number brought up as industrialists in metals, new men willing to try new letters.<sup>6</sup> Regiomontanus, who had a press at Nuremberg, was of that stamp. He ends his advertisement for mathematical instruments issued about 1475<sup>7</sup> with words to this effect:

In the workshop an astrarium is kept in continual motion: a thing marvellous to behold; and other instruments are being made for

<sup>1</sup> *B.M.C.* i, pl. iv, Type 118; Burger, 90.

<sup>2</sup> *B.M.C.* i, pl. xxx, Type 95; Burger, 151.

<sup>3</sup> *B.M.C.* i, pl. vii, Type 102; Burger, 221.

<sup>4</sup> *B.M.C.* i, pl. xxxiii, Type 123; Burger, 4.

<sup>5</sup> C. Wehmer in *Gutenberg-Jahrbuch* 1933, at p. 293.

<sup>6</sup> *Ibid.*, at p. 301.

<sup>7</sup> Hain 13807; *B.M.C.* ii, p. 457, pl. xli, Type 116.

observing the heavens, as well as appliances for everyday use, whose names it would be tedious to recite. Last of all it has been decided to practise the wonderful art of making printing type for lasting records, and may God prosper it! Once that is mastered, though the workman die soon after, death will have no bitterness for him, knowing as he will that he has left to posterity a gift to save them for ever after from want of books.

Whether Regiomontanus attained to the practice of typefounding is not certain. He turned a Roman face into a curious hybrid<sup>1</sup> by substituting gothic forms for some of the original sorts, producing a fount of type as pleasing as the 'Blackfriars' type<sup>2</sup> made early in this century by another eminent engineer, Alphonse Legros.

With the virtual supersession of these experimental German types, that is to say about 1478, the incunabula of typefounding came to an end.

To remind ourselves that these earliest of printers' letters are highly artificial it would only be necessary to look at the receipt (Fig. 28) that Peter Schöffer wrote for the Bishop of Meissen in 1489.<sup>3</sup> It is surprising to find the writing so like our own. We have so lost touch with written books that we might imagine that the script of everyday life could be used for them. Those people who still insist on their sacred texts being written by hand would not use the same alphabet for a receipt or a letter to a friend. Something in the nature of society itself, not merely the class of expert letterers, insisted that printing should preserve a variety of scripts graded in point of formality. But there is little left of that now: the only book script that we know is a printer's type.

The peculiarity of book hands is that they are legible, therefore easier to read than to write. Once printing is invented they carry all before them because the punchcutter does the difficult work of making the letters clear and distinct, and the printer had as soon use elaborate characters as any other. That is why nothing like

<sup>1</sup> *B.M.C.* ii, pl. xlii, Type 94B.

<sup>2</sup> Legros and Grant, *Typographical Printing Surfaces*, pp. 82-6.

<sup>3</sup> Reproduced in Adolf Tronnier, 'Die Missaldrucke Peter Schöffers und seines Sohnes Johann', *Veröff. der Gutenberg-Gesellschaft*, v-vii (Mainz, 1908), pl. xiv.

Schöffer's business handwriting appeared in the form of type until 1557,<sup>1</sup> when it met with only a limited demand. Readers are not troubled by being given letters to read that are clearer than those that they write.

A reform of the Latin alphabet due to printing had to come if only because mass-production involves standardization. It was by chance that the alphabet worked out by Italian humanists was offered to printers at the time when they were feeling for an idiom that printing could develop. Of the old alphabets the first to be disused was the northern copying hand first appearing in print in the Mainz Durandus. It was too simple; the reading eye learns to rely on the excrescences from letters as much as on their essentials, especially when the impression is imperfect. The northern style of rotunda types went out of use in the main centres of printing a year or two before 1480 and lingered on only a few more years in the conservative places, Cologne, Speier, Deventer—even the printer at Oxford had given up his by 1481. The northern Italian rotunda, the Bolognese book hand, is another matter; that had been elaborated into a first-class script with great potentialities in typography.

Assertions or opinions that certain kinds of letters or whole scripts were avoided or handicapped in typography because they made difficulties for punchcutters and typefounders should be discounted. That printers fought shy of kinds of type that were expensive or troublesome to handle is true; but to a large extent they had to use them nevertheless. The comparative numbers of readers, printers, and typefounders is such that the convenience of the least numerous gets very little consideration.

Simple forms would not tend to prevail for technical reasons. They are not, for one thing, the easiest to cut well. As Giotto knew, the man who can draw a big O is a master, and to try to cut it in relief on steel is to be constantly reminded of it. Smallness

<sup>1</sup> Robert Granjon's first *lettre françoise*: see H. Carter and H. D. L. Vervliet, *Civilité Types* (Oxford, 1965), pp. 11 ff. I am not sure whether the type used about 1490 by Le Talleur of Rouen for Littleton's *Tenores novelli* and Statham's *Abridgement* has the right associations to qualify for a business hand (see below, p. 61). It seems to me to represent a charter hand with lawyers' abbreviations.

and intricacy help to conceal weaknesses in drawing; and it is essentially with drawing that the punchcutter has to struggle—not with cutting the metal. The punch, on which the letter has to be cut turned left-to-right, may turn out well in an hour or two or it may take several days before it looks right.

The sense of what is right or wrong about a letter is an inheritance from the past. Printing has deviated some way from writing, but our mental image is the same for both—we look on the printed page for the merit we associate with good penmanship. The first printer faced by having to get type made faced also a critical faculty trained by centuries of practice. Besides the tradition that a certain style of letter was appropriate there was also the tradition of high quality. His success in all respects may seem startling if one does not bear in mind the slight extent to which technical proficiency enters into it.

As evidence of the pride of an early letter-cutter in rendering the beauty of writing and preserving its traditional forms I would quote Guillaume Le Bé the elder, of Paris, one of the few punchcutters who wrote anything about his craft. About the year 1580 he noted in the margin of a specimen: 'These five examples are of types of Robert Estienne, the square Hebrews cut in Paris in 1541 by one Jehan Arnoul, the Rashi by another man. Very pretty and savouring of his pen.'<sup>1</sup> Against another specimen he notes: 'This big Hebrew type is better for penstrokes than the preceding one, but not so well filed and polished.'<sup>2</sup> Of another Rashi he says: 'bien antique et taillé d'un bon maistre'.<sup>3</sup> Under his big woodcut models for Hebrew letters is written: 'In 1573 in Paris I made this design and portrait for the Hebrew alphabet according to the best strokes and those most surely received from antiquity in the judgment of the people most experienced in Hebrew letters among the Jewish confession and nation in the city of Venice.'<sup>4</sup>

These comments amount to a complete negation of designing as we should understand it, and they come from one of the most

<sup>1</sup> Paris, Bibl. Nat., MS. Rés. x, 1665, fol. 4.

<sup>2</sup> Ibid., fol. 2.

<sup>3</sup> Ibid., fol. 19<sup>v</sup>.

<sup>4</sup> Bibl. Nat., MS. Nouv. acq. fr. 4528, fol. 14<sup>v</sup>-16.

skilful of artist-punchcutters of the greatest school, that of Paris in the sixteenth century.

Of the designers and cutters of letters before that age we know next to nothing. My aim of labelling all typefaces by the names of their originators is quite unattainable until the sixteenth century is well on its way. The best we can do for the incunabula and early post-incunabula is to sort types by their styles and attach to them the names of the printers who first used them. The discrimination of the styles is what I have been discussing today, and it is difficult. Any discussion of it must bring to light a belief on the part of the engraver that his work was a branch of calligraphy, at least until late in the sixteenth century, so the terminology must come from that art. The discovery of the printer who first owned a particular type is a work that must be carried on from the point where the incunabulists leave it. Proctor's *Index*<sup>1</sup> and A. F. Johnson's essay on 'The Supply of Types in the Sixteenth Century'<sup>2</sup> and where our own country is concerned the compilations of Colonel Frank Isaac<sup>3</sup> have given us a useful start. But, with all that, real historical insight enters into typography when archives relating to the actors in it begin to supplement what you can see on the printed page.

<sup>1</sup> *Index to the Early Printed Books in the British Museum, Part ii, sect. i: Germany, 1501-1520* (1903).

<sup>2</sup> *The Library*, 4th ser. xxiv (1943-4), pp. 47-65.

<sup>3</sup> *English Printers' Types of the Sixteenth Century* (1936); *English and Scottish Printing Types 1501-35, 1508-41*, Bibliographical Society, Facsimiles and Illustrations No. ii (1930); *English and Scottish Printing Types 1535-58, 1552-8*, Bib. Soc., Facs. and Illus. No. iii (1932).

THE ESTABLISHMENT OF  
COMMON IDIOMS

THE Latin alphabets, majuscule and minuscule, now universally used by printers were given typographical shape in the years 1467–1501. The essential alphabets are three, the formal and informal minuscules and the capitals, which serve for both. Another alphabet, of inclined capitals, was introduced in 1524, and a fifth, the upright small capitals, was added in France in 1526.

The two more formal alphabets together constitute Roman type. I would define it as one whose capital letters reproduce classical inscripational models and whose minuscules are made to conform with the capitals in their style or construction. This definition would still apply if we were to call the design not Roman but Antiqua, as the Germans do.

Roman is not to say humanistic, though Roman typefaces were versions of humanist scripts with adaptation to the typographical medium. How the handwriting which was the model for these alphabets came to be adopted by a group of Italian scholars has only lately been told very clearly by the late Dr. B. L. Ullman and there is no need to say more about it.<sup>1</sup> Petrarch and Coluccio Salutati in the fourteenth century, he says, revived the round hand of the early Middle Ages, copying examples of the ninth to the twelfth century. As Ullman says, they wrote a gothic script including uncial forms for the capitals. It was the book script that went on being used until printing was invented and was rendered in type for the Durandus of Fust and Schöffer and for Zell and other printers at Cologne and elsewhere. The novelty in the writing of Petrarch and Coluccio was that they avoided crowding the letters together and gave them rotund curves without the

<sup>1</sup> *The Origin and Development of Humanistic Script* (Rome, 1960).

abrupt transition from thick to thin that the writing masters called 'fractura'. However, when you come to Poggio Bracciolini, the inventor, as Ullman maintains, of humanistic script, you find him in the first decade of the fifteenth century writing Roman capital letters with minuscules of the same kind as Petrarch's.

Ullman thinks that it was Poggio who began the passionate study of classical inscriptions to which several gifted Italians devoted themselves later in the century. Some of them were not scribes: Ciriaco of Ancona, antiquary, Andrea Mantegna, painter, Leon Battista Alberti, architect, and one who was an antiquary and something of a scribe, Felice Feliciano.<sup>1</sup> They were concerned with reviving these letters in architecture rather than in books. Felice's enlarged drawings of typical Roman capitals (Fig. 33) based on classical examples<sup>2</sup> led to a series of attempts to construct the letters by rigid geometry beginning with a booklet by Damiano Moylle of about 1480<sup>3</sup> and going on late in the sixteenth century.

Whereas the capitals of Black Letter could be and were written variously and differed from place to place and were not in the childrens' alphabet-books, the humanistic script was tied to the Roman capitals and was influenced by them increasingly as time went on. They were the alphabet of the Renaissance: Geofroy Tory in his treatise on the Antique or Roman letters, a book aimed at promoting the Renaissance in France, does not so much as mention the minuscules, publisher and printer though he was.

The marriage of inscriptional capitals and pen-made small letters whether in handwriting or in type is not a perfectly happy one, and many of the artists who have turned their hands to designing typefaces have tried to undo it. At first there was

<sup>1</sup> G. Mardersteig, 'L. B. Alberti e la rinascità del carattere lapidario romano del Quattrocento', *Italia medioevale e umanistica*, ii (Padua, 1959), pp. 285-307; Charles Mitchell, 'Felice Feliciano antiquarius', *Proc. of the British Academy*, vol. xlvii (1961), pp. 197-221; E. Casamassima, *Trattati di scrittura del Cinquecento italiano* (Milan, 1966), chap. i.

<sup>2</sup> Vatican Library, MS. Vat. Lat. 6852, dated 1463; G. Mardersteig (ed.), Felice Feliciano, *Alphabetum romanum* (Verona, 1960).

<sup>3</sup> S. Morison, *A Newly Discovered Treatise on Classic Letter Design printed at Parma by Damianus Moyllus (c. 1480) reproduced in Facsimile* (Paris, 1927).



doubt as to which should be the dominant partner and impose its idiom on the other. However, Jenson to a large extent and Aldus completely laid down a pattern of a consortium preserving the purity of the antique capitals and making the lower-case conform with them as best it could. Such was the prestige of Aldus and the skill of his punchcutter that this arrangement of the priorities has been the rule ever since.

The first typeface to be fully Roman is, I think, the one that the R-Printer was using at Strasburg by 1467 (Fig. 35).<sup>1</sup> It has classical capitals of rather a rough kind and the characters of the lower case have been given serifs to match them and are widened and rounded so that their curves are consistent with those of the capitals. Apart from the curious R it makes a legible fount not without symmetry and harmony.

I quote the date 1467 as the latest by which the R-Printer's Roman fount was in use, the date accepted by Dr. Scholderer.<sup>2</sup> It is four or five years earlier than any other of the kind in Germany and more fully developed than its immediate successors. Its existence at so early a time cannot be fully explained even by its cutter being in touch with Italian printers, whose designs had not then reached such a pitch of romanization.

There were typefaces reproducing the Italian humanists' calligraphy before 1467. At Subiaco, Sweynheym and Pannartz began using the first of them in 1464 or 1465.<sup>3</sup> Theirs is a face of mixed character (Fig. 36) to which the name gothico-antiqua can properly be given. As a design it is biased towards the lower case; by which I mean that the rendering of penstrokes is apt for the minuscules but can approximate only roughly to classical capitals. The treatment of the whole is frankly calligraphic. It is humanist, but it is a German's idea of Italian humanism. Whoever cut the face was trained in the gothic tradition of letting the character of his tool, in this case an imagined tool, a pen, show in the finished work. It

<sup>1</sup> *B.M.C.* i, pl. v, Type 103; Burger 171.

<sup>2</sup> *Fifty Essays in Fifteenth- and Sixteenth-Century Bibliography* (Amsterdam, 1966), at p. 151.

<sup>3</sup> *B.M.C.* iv, pl. i\*, Type 1208G; Burger 45; Updike, fig. 24.

is gothic, too, in the crowding of the strokes together and in their insufficiently-relieved blackness. Comparison of the type with the writing of a contemporary Florentine copyist<sup>1</sup> shows a difference of aim, the Italian trying to achieve rotundity, delicacy, and lightness, which are absent from the printed text. As a work of art, another matter, the Subiaco fount has few to rival it.

The second type of the same printers (Fig. 37), appearing at Rome in 1467,<sup>2</sup> is not fully Roman. It does render a typical inscriptional capital alphabet, but the minuscule letters, though they have been made to harmonize with the capitals in curvature, are not, like them, given serifs: they still have the penman's leading-in and leading-out curls. The difference between the medieval Latin minuscule and the minuscule of the Renaissance is one of style, therefore to a large extent of opinion: a Roman type is one that has classical capitals and serifs at the terminals of the straight strokes. Serifs are added strokes, not continuations nor terminal thickenings. The mysterious and modern word comes, I suppose, from the Dutch 'schreef' for a scratch or flick of the pen.

Other typefaces which can best be called humanistic are those of the press in the Sorbonne in Paris, which started to print in 1470,<sup>3</sup> and of Ulrich Han, Sixtus Riessinger, and Georg Lauer at Rome about that time.<sup>4</sup>

It is very unlikely that these first German printers in Italy or France would have gone abroad without taking with them a bag of matrices. There is, I think, the stamp of a south-German school on their letters. In particular there is a strong affinity in the R-Printer's Roman and the second type of Sweynheym and Pannartz.<sup>5</sup> Both have curiously wide forms for E and F and a T with exaggerated upright terminals to the horizontal stroke and similarities in the drawing of G and S. Divergences such as

<sup>1</sup> Such as those illustrated in Ullman, *op. cit.*, pl. 60-5.

<sup>2</sup> *B.M.C.* iv, pl. i\*, Type 115R; Burger 82; Updike, fig. 25.

<sup>3</sup> *B.M.C.* viii, pl. ir.

<sup>4</sup> *B.M.C.* iv, pl. ii\*, Type 86R; pl. iii\*, Types 81R, 125R, 128R; Burger 83(1).

<sup>5</sup> Cf. V. Scholderer in *50 Essays*, p. 151: '... the R-type differs from Sweynheym and Pannartz's type about as much as one roman face can well differ from another' (but he notes that Haebler found a resemblance).

these from the normal to be seen on the monuments of imperial Rome are easier to reconcile with a German than with an Italian origin.

Adolf Rusch, whom incunabulists identify with the R-Printer, appears to have dealt in typographical equipment. He is known to have printed with three types only, but he had a variety of punches. On 26 November 1483 he wrote to Amerbach at Basle: 'As for punches, as soon as Heinrich comes he will send you an account of all and everything that I have in that particular, and you may use any you like to make type.'<sup>1</sup>

The faces that I would name humanist were a stage on the way to the Roman and so were some of the hybrids of gothic and Roman, though more of them were retreats from it. The hybrids date between, say, 1472, when Roman type became known in southern Germany, and 1500 when it had been accepted everywhere as the vehicle for liberal Latin. The thorough mixture is a German phenomenon: the French, Italian, and Netherlandish examples are rather a matter of putting capitals approximately Roman with a gothic lower case, or, occasionally, the opposite of that. The Germans' love of the gothic that made them reluctant to give it up even for Latin was, I think, partly an artistic preference, due to its greater fidelity to the aesthetic of writing. Writing the pure Roman was niggling and yet printed it was evidently meant to be an imitation of writing. When William Morris exclaimed that the first printed books were the best ever done<sup>2</sup> he was thinking not of the 42- or 36-line Bible but of such as Zainer's of Augsburg (Fig. 39)<sup>3</sup> or the Ptolemy printed at Ulm in a type reproducing a manuscript for the copy done in a semi-humanist hand.<sup>4</sup> They were, indeed, private press founts. They differed so much and achieved so little fixity in the formation of the alphabet that they were unsuited to a book trade; few people willingly learn to read a typeface peculiar to a printer.

<sup>1</sup> *Amerbach-Korrespondenz*, i, p. 8, No. 7.

<sup>2</sup> William Morris, *Collected Works*, vol. 15 (1912), p. xv.

<sup>3</sup> *B.M.C.* ii, pl. xxx, Types 117, 118; Burger 2, 26.

<sup>4</sup> *B.M.C.* ii, pl. 1, Type 140; Burger 197; Updike, fig. 23.

The gotico-Roman is not to my purpose, which is to trace the emergence of common idioms in typography.

The effect of Italian humanism on northern type begins to show, if we disregard a very few isolated instances (the R-Printer and the printer of some postils at Speier) in 1472, when Günther Zainer at Augsburg (Fig. 38) followed closely by the monastery of Sts. Ulrich and Afra there began printing in Roman.<sup>1</sup> Augsburg was of German cities the most linked with Italy and the abbey was a corridor for passing Italian ideas northwards. The intellectual traffic from the south was not all in humane studies. The business of the Church with its headquarters in Rome and of the Benedictine order to which this monastery belonged, the canon law and the civil law which many ecclesiastics had to master made the clergy north of the Alpine passes familiar with books and documents written at Bologna, Padua, and Rome. The northern Italian book script was known in many parts of Europe.

Examples of a regular and polished hand, associated especially with Bologna, are found written in the latter part of the 12th century.<sup>2</sup> This Italian rotunda (Fig. 40) was a somewhat cramped letter with short ascending and descending strokes. It was of the family of scripts called *textus prescisus* or *sine pedibus*, it had no feet; the French called the family *lettre de somme* and ranked it in the order of formality second to the *textura*. The characters had acquired a fixity of shape by the fifteenth century that was rare in medieval hands—even the capitals varied less than those of the northern gothics. These characteristics endeared it to printers: it was ideally suited to printing and printing was ideally suited to it.

As soon as Wendelin de Spira at Venice adopted a type of this design for a work on canon law in 1472<sup>3</sup> other printers followed his example. His typeface (Fig. 41) was cut with a somewhat uncertain hand and its capitals were extravagantly ornamental. They were used by two other Italian printers. Lavagnia, a printer

<sup>1</sup> B.M.C. ii, pl. xxx, Type 107, pl. xxxi, Type 105; Burger 1.

<sup>2</sup> B. Pagnin, 'La littera Bononiensis', *Atti del R. Istituto Veneto*, 93 (1933-4), pp. 1593-1670.

<sup>3</sup> For Nicolaus Panormitanus, *Prima pars secundi libri Decretalium* (Hain 12322). B.M.C. v, p. 159, pl. xiv\*, Types 99c, 200c.

at Milan, had a similar face, feebly cut, in 1472 also.<sup>1</sup> It remained for Bartholomew of Cremona in 1473<sup>2</sup> and Nicholas Jenson the year after<sup>3</sup> to give this design an expert and definitive typographical form.

These were not quite the earliest Italian gothic types. A big and fat one, a bold Great Primer suitable for headings, was used by Ulrich Han at Rome in 1467.<sup>4</sup> It is not the conventional Bolognese letter, but yet a rotunda of a decidedly Italian fashion. The style became very popular for display types wherever printing was done, and was favoured even if the texts beneath the headings were set in Roman or in textura.

It is curious that the first appearance of a type for the Italian gothic outside Italy should have been in conservative Cologne, and in 1472,<sup>5</sup> within a year of the use at Venice of the type of Wendelin de Spira on which it was evidently modelled. In north Germany at the time it was a revolutionary design in print, however well the learned clergy may have known it in manuscript. Moreover another type for the Italian gothic occurs a year later in the printing at Aalst near Brussels of John of Westphalia and Dirk Martens.<sup>6</sup> It shares eccentricities in the cut of capital letters with one used by Conrad of Paderborn at Padua, and two years later some of its capitals are found at the press of Eggestein at Strasburg.<sup>7</sup> A possible explanation is that the four typefaces in question were cut there. This hypothesis involves supposing that one punch-cutter in Strasburg was responsible for all four types or that one or more there knew what another was doing. That would account for Koelhoff at Cologne and John of Westphalia at Aalst having these types so soon after the making of the models for them to be used in Italy, but it would not explain why these northerners wanted such a typically southern design.

<sup>1</sup> *B.M.C.* vi, pl. 1\*, Type 112G.

<sup>2</sup> *B.M.C.* v, pl. xviii\*, Type 79G; T.F.S., 1900r.

<sup>3</sup> *B.M.C.* v, pl. xv\*, Types 150G, 106G, 93G, 84G; T.F.S. 1907i.

<sup>4</sup> *B.M.C.* iv, pl. i\*, Type 150G; Burger 23.

<sup>5</sup> In Joh. Nider, *Praeceptorium divinae legis* (Cologne, J. Koelhoff, 1472. Hain 11786). *B.M.C.* i, p. 217, pl. xxii, Type 98A; Burger 33.

<sup>6</sup> Hain 6248; *B.M.C.* ix, p. 125, pl. 1B, Type 89G.

<sup>7</sup> *B.M.C.* ix, p. 125.

We can attribute the reception of the Italian rotunda in central and northern Europe only to the admiration felt there for Italy. Not necessarily at first for humanism; but as the New Learning spread, rotunda type was commonly used to convey it. Probably the civil law emanating from Bologna was regarded then as liberal and civilizing as compared with the customary law of Franks and Germans and the script associated with it was considered humane. The northern scholars who studied Greek and Hebrew appear to have favoured type for the Italian gothic. Dirk Martens, the printer of Erasmus at Louvain and Antwerp, was fond of this design;<sup>1</sup> it was not thought incongruous to use it for headings to texts set in Roman or even to surround it with ornament of classical inspiration.<sup>2</sup> Very soon it became acceptable for anything in Latin, even for liturgies. A Missal for Basle was set in rotunda in 1480;<sup>3</sup> and in Germany a Mainz Missal was set in 1492 by Georg Reyser at Würzburg in a rather tentative essay in this manner.<sup>4</sup> In a foreword to an Augsburg breviary of 1493, the bishop calls Erhard Ratdolt's very accomplished type of this design 'perpolitus et optimus character'.<sup>5</sup>

Lyons, in the centre of France, began printing with Italian rotunda type in 1482, its first printer, Guillaume Le Roy, introducing a fashion which prevailed in that important centre of printing, and especially law printing, for fifty years.<sup>6</sup> From there this family of types passed to Toulouse and other towns in the centre and south of France and to the Iberian peninsula, where the rotunda was commonly used until the seventeenth century.<sup>7</sup>

<sup>1</sup> B.M.C. ix, p. 168; Vervliet, *Sixteenth-Century Printing Types of the Low Countries*, p. 50.

<sup>2</sup> Examples in W. Nijhoff, *L'Art typographique dans les Pays-Bas pendant les années 1500 à 1540* (The Hague, 1926-35); A. F. Johnson, *German Renaissance Title-Borders*, Bibliographical Society Facsimiles and Illustrations, No. 1 (1929); Updike, fig. 50.

<sup>3</sup> Hain 11266; Burger 278; Bodl. Auct. 6Q II. 19.

<sup>4</sup> Hain 11331; B.M.C. ii, p. 569; for the type see Burger 32.

<sup>5</sup> Carl Wehmer in *Augusta, 955-1955*, at p. 170; Hain 3793. For Ratdolt's types see G. Mori, *Das Schriftgießergewerbe in Süddeutschland* (Stuttgart, 1924), pl. 1; B.M.C. ii, pl. xxxv, xxxvi; Burger 5; Updike, fig. 29.

<sup>6</sup> B.M.C. viii, pl. xxxivf and following plates.

<sup>7</sup> Updike, vol. ii, p. 47.

There is every reason to suppose that printers liked this style. It was cut in a range of sizes from the Nonpareil (Fig. 42) in which Froben set the Vulgate in 1491<sup>1</sup> up to the Canon serving for Missals, the only kind of type of which this can be said for a date before 1501, and its distribution extended over Europe. All the well-known Parisian printers had founts of the kind from Pasquier Bonhomme in 1479<sup>2</sup> onwards, and some occur at Rouen.<sup>3</sup> In England, where association with Roman law would not much recommend it, Pynson by 1498 and De Worde by 1500 had it in small sizes fit for commentaries.<sup>4</sup>

The partiality of printers was not enough to ensure the permanence of Italian rotunda as the model. There must have been many reasons, chiefly, perhaps, a growing appetite for elegant Latin in an elegant dress. Those who find Italian gothic architecture too matter of fact will find the same quality in the type. It lacks the extravagance of the northern textura which expresses by laborious penstrokes and distorted letter-forms a pious exaltation—the rigidity and redundancy that Ruskin noted as essential to the nature of the gothic—a delight in making a simple thing difficult as proof of diligence with sacred aims. This kind of diligence is required of cutters of printing types. The rotunda, lacking all this, is yet gothic: it is blacker than a typeface should be for comfortable reading and its capitals will not make words.

Before dismissing it as a thing worn out, I would note that the rotunda was rarely used to print northern languages. Association with Latin made it seem inappropriate for anything else, the gulf between Latin and the vernacular in the mind of northern man at that time being wider and deeper than we can easily imagine. The rotunda, in short, proved to be unsuitable for the languages of everyday life and less than ideally suitable for Latin. In Italy where it was the only gothic style in type it went on being used for

<sup>1</sup> Hain 3107; A. Bruckner, *Schweizer Stempelschneider und Schriftgießer* (Basle, 1943), pl. v; *B.M.C.* iii, p. 789, pl. lxxv, Type 44.

<sup>2</sup> *B.M.C.* viii, p. 12, pl. iii, Type 74G.

<sup>3</sup> *Ibid.*, pl. lxxvii.

<sup>4</sup> Duff, *Fifteenth Century English Books*, pl. xviii, xxxii, xxxiii; F. Isaac, *English and Scottish Printing Types 1501–35, 1508–41*, fig. 8, 18, 25a.

liturgies and books of devotion until the conclusion of the Council of Trent and even later.<sup>1</sup>

Let us, then, have another look at the humanistic book hand. Bodleian MS. Canon. Class. Lat. 274 (Fig. 66), written about 1450 for the King of Aragon at Naples, is a fine example. Writing such as this recaptures much of the sharpness and delicacy of an incised letter; but this was a thing that a punchcutter working on steel could do even better: he could cease to copy penmanship and go back to the model. With the Roman types of Italy from that of Nicholas Jenson of 1470<sup>2</sup> onwards we come to a closer and more accomplished reproduction of the antique (Fig. 55). So we come to a divagation of typography from calligraphy: not a separation, for that has never been achieved.

The improvement of lenses during the latter part of the fifteenth century would account for some change of taste in book script and type, more pleasure in fine workmanship, accuracy, neatness, and detail. It is very possible that the earliest German cutters of punches did not work through a magnifying glass, and I do not know when it became the invariable practice to do so. The advance in accuracy of cutting and justifying during the later 1470s may have shown an effect of the jeweller's eyeglass which a typesetter has in his pocket when not screwed in his face, just as appreciation of it may have been due to the reader's better spectacles.

The aesthetic of the Renaissance involved giving pleasure by associating the product of art with ancient Greece or Rome. It was not a mere matter of adding classical architectural ornament to all manner of things: it meant transferring handiworks from the visible world to a world of mental images. By comparison with the medieval habit of admiring skill and pains in honour of religion or morality it was intellectual. The introduction of intellect made severe demands on the craftsman. The idea of a

<sup>1</sup> (Victor Masséna) Duc de Rivoli, *Études sur l'art de la gravure sur bois à Venise: les Missels imprimés à Venise de 1481 à 1600* (Paris, 1896), p. vii.

<sup>2</sup> S. Morison, *Four Centuries of Fine Printing* (1924), pl. ii, iii; *B.M.C.* v, pl. xv\*, Type 115R; Urdike, fig. 27.



straight line is straighter than anything hands can make and the ideal curve is fairer.

However, before launching printer's type on its career of approximating to straightness of line and fairness of curve and seeing the punchcutters of the sixteenth century set to reproduce Roman letters made with rule and compass, we must consider the kinds of printing for which letters of that kind were unacceptable and the typefaces made to furnish it.

In the earliest days of printing there was still a division of Europe into north and south. In business, of which typefounding is a part, the old empires of Constantinople and Venice in the south and of Cologne and Flanders in the north were dissolving slowly. Allegiance in money matters to one or another still affected typography. To the south of a line through the middles of Germany and France types in the Italian rotunda or Roman conventions were acceptable. About 1480 it became easier to trade within national limits: the complication of a Burgundy, which was not national, straddling the ethnic frontiers had disappeared; Paris and the cities of southern Germany had grown to metropolitan dimensions. In Germany, German types appeared; Lyons began about 1485-90 to copy the style of northern France by adopting looped *bâtarde* for books in French.<sup>1</sup>

It was in the north that the habit of writing different kinds of things in different handwritings and demanding a consequent variety of typefaces died harder. A bewildering variety of type-families in Low Germany (as it was then understood) and northern France answered roughly to the practice of writers in the several regions, of scribes for church service books, copyists for students' texts, scriveners for business, public or private. There was general agreement that church books, Missals, that is, and choral books, should be in the formal *textura*, and that the simple Germanic rotunda or the Italian style were appropriate for portable breviaries and text books for the clergy and students. In these countries there was a comparatively big demand for books in the northern languages: those they had to print themselves, whereas they could

<sup>1</sup> Fierabras, 1485 (?); Hain 7085; *B.M.C.* viii, p. 237.

import the books in Latin. In Germany and in northern France and Flanders, *bastarda*, first used in a simplified form for the Indulgences of 1454–5, came increasingly into use for the local languages and developed distinctive forms in the several regions. In Cologne and the northern part of the Low Countries a hybrid of *bastarda* and *textura* was popular for a time.

To the momentous things that happened about 1490, dividing our historical studies in two, might be added the adoption by Germans of distinctive type for their language. The German *textura* was forbidding in its unrelieved angularity. The capitals are more austere than those of the similar hands of Holland or France and some are even ungainly. When it is impressive, as it is in the Mainz Psalter of 1457, it is so partly because of its large size. It is not surprising that the Germans felt a need for an alphabet more homely for ordinary purposes. They used old *textura* types for headings until the 1520s; then they turned to newer styles. In his writing manual of 1553 Wolfgang Fugger describes the *Textur* as 'a beautiful, yet stately, and picturesque hand when written with great diligence' and says that 'it was common in past times, as the prayer books, psalters, and other books (which were printed at Bamberg) will testify'.<sup>1</sup>

The German vernacular types appear soon after 1470. They have the features of the *bastarda*, single-storeyed a, descending f and long-s, g with strokes crossing at the head, and final s like a figure 8 (Fig. 44). They are strongly gothic, reproducing the effect of a soft, broad, slanted pen, but the letters are simplified, so that o has two angles instead of the six that the formal Black Letter gives it. The capitals are undecorated and have strange abrupt forms that seem most akin to those in manuscripts from Bohemia.<sup>2</sup> By 1490 these types were widespread over Germany as a whole and had acquired the fixed character called *Schwabacher*.<sup>3</sup>

<sup>1</sup> *Wolfgang Fugger's Writing Manual*, translated by Frederick Plaet (1960), sig. H4<sup>v</sup>.

<sup>2</sup> See E. Crous and J. Kirchner, *Die gotischen Schriftarten* (Leipzig, 1928), Abb. 44, described in the list of illustrations as 'böhmisch-fränkisch'.

<sup>3</sup> H. Claus, *Die Schwabacher Schrift in Vergangenheit und Gegenwart*, Monographien des Buchgewerbes, herausgegeben vom Deutschen Buchgewerbeverein. X. Bd. (Leipzig, c. 1916).

It is a handsome design. The wideness of the letters gives it an advantage in legibility; but I think it is comfortable and pleasant to read because it looks as though it had been delightful to write. A combination of its letters has a fluency and forward tendency due to the diagonal stress and the presence of rudimentary leading-on strokes bringing the pen to a position from which it can begin the next character. It must be seen as a vigorous manifestation of late-gothic German art.

A fashion of type is an encumbrance to the reading world until it becomes common. This German vernacular style proliferated, and before the end of the fifteenth century it was represented by type of four sizes. The biggest occurs in 1472 in a book printed at Augsburg by Johann Bämle.<sup>1</sup> So far as lower-case letters are concerned, Bämle's face is a fully developed Schwabacher: it remained to find forms for some of the capitals that accorded better with them. The perfection of the design may be dated in 1484, when Lienhart Holle of Ulm set a *Buch der Weisheit* in a type of the kind<sup>2</sup> (Fig. 43).

Smaller typefaces in this convention came on the market within the next two years. They were right for the more popular books in German, devotional and moral works, chronicles, and fables. The Schwabacher was the normal vehicle for German from 1490 until, about 1540,<sup>3</sup> it was outdone in favour by Fraktur. It is one of the oldest designs still in commercial use, as it is for advertising beer and hock and other things *volkstümlich* and specially dear to the German heart.

The reduplication of founts of Schwabacher type in the years 1485–1501 is the clearest disproof of the theory that during the incunabula every printer made his own type so that every typeface was peculiar to a press. In these fifteen years at least fifty printers in Germany and Basle acquired founts of Schwabacher of roughly the same size—the one known to English printers as

<sup>1</sup> Johannes von Freiburg, *Summa confessorum*. Hain 7367. *B.M.C.* ii, p. 331, pl. xxxi, Type 119; Burger 152; Updike, fig. 19.

<sup>2</sup> Hain 4030; *B.M.C.* ii, p. 538, pl. 1, Type 121; Burger 174.

<sup>3</sup> A. F. Johnson, *Type Designs, their History and Development*, 2nd ed. (1959), p. 25, says 'about 1550'.

English, or, as the incunabulists have it, fitting a body of which twenty measure about 90 mm. Many of the founts are identical in the sense that they reproduce the same punches—allowing for a few variant letters. Examining some fifty founts of Schwabacher fitting that body in use between 1485 and 1530, I think I can distinguish eight basic sets of punches at the most. The commonest of these typefaces is found in the work of at least fifteen printers in different places, Strasburg, Cologne, Augsburg, Ulm, Speier, Ingolstadt, and Basle. The variant letters, most of them capitals, show that several sets of matrices were used to cast these founts, and differences in the measurement of the bodies, the effect of different moulds, make one think it was matrices, not type, that the printers bought from a common source.

In some of these founts there were two forms for the lower-case letters b d h k, one with a straight ascender and the other with a loop. The looped forms tended to disappear as time went on, perhaps because they overhung adjoining sorts and so had to be kerned and were apt to break. Peter Schöffer's press at Mainz was among the first to use an English-bodied Schwabacher, with the *Hortus sanitatis* of 1485.<sup>1</sup> A year later Erhard Reuwich printed his Breydenbach's *Peregrinationes*<sup>2</sup> also at Mainz in a fount made from the same punches (Fig. 45), though not the same matrices (the verticality of the letters is less accurate), except that he introduced a d without a loop. His d is too big, and he must have cast de di do and du using two matrices side-by-side in the mould to produce the combinations on a single piece of type, because in these doublets the e i o u are also too big and differ in design from those of the fount.

Peter Schöffer was still using his fount with the loops in 1492, but in 1521 Johann Schöffer was printing with a fount generally the same as his father's but without the looped forms. One including the looped forms that occur in the *Hortus sanitatis* belonged in 1501 to Roeloff Spot at Cologne,<sup>3</sup> but Spot's matrices were not nearly so well justified as Schöffer's.

<sup>1</sup> Hain 8948; Updike, fig. 18; *B.M.C.* i, pl. ii, Type 93; Burger 75.

<sup>2</sup> Hain 3956; *B.M.C.* i, p. 43; Burger 18.

<sup>3</sup> T.F.S. 1904b.

The Schwabachers were by no means the only founts to be reduplicated and used simultaneously by more than one printer in the last two decades of the fifteenth century. An instance is the larger textura type of the Meissen Missal of 1495 printed at Leipzig by Kachelofen.<sup>1</sup> It had been used previously at Nuremberg (by Mair)<sup>2</sup> and Spörer at Erfurt,<sup>3</sup> and is to be found later in the work of Stuchs and Hochfeder at Nuremberg,<sup>4</sup> and Lotter at Leipzig.<sup>5</sup>

It is possible to see in the standardizing and spread of vernacular types at this time, soon after an almost equally general acceptance of the Italian gothic for Latin, an assertion of northern self-consciousness, a determination to keep the two cultural influences flowing separately. Statistically, printing in the vernacular did not bulk large in the first fifty years—about 21 per cent in Italy, 24 per cent in Germany, and 35 per cent in France.<sup>6</sup> However, in the last years of the fifteenth century it was growing. The local languages were being used for serious works in translation as well as for chronicles and pious manuals. The Bible in German dates from 1466 and there were eighteen editions of it by 1518.<sup>7</sup> Aristotle's *Ethics* and *Politics* were printed in French in 1489. The vernacular even intruded into universities: the historian of printing in Leipzig records with shame that lectures were given there partly in German about 1500.<sup>8</sup>

In France *bastarda* types were brought in at much the same time as the Schwabacher in Germany and their spread was as rapid. The earliest occurrence of an *ancienne bâtarde* that I can find is in a book printed at Paris in 1475 on the examination of prisoners in Latin (I mean the book is).<sup>9</sup> Ten years later this style in type was common. In its typical form it is unlike the German vernacular

<sup>1</sup> Hain 11327; Burger 35.

<sup>2</sup> Burger 168.

<sup>3</sup> Burger 235.

<sup>4</sup> *B.M.C.* ii, pp. 467, 473.

<sup>5</sup> *B.M.C.* iii, p. 649.

<sup>6</sup> *B.M.C.* ix, p. xv.

<sup>7</sup> *Cambridge History of the Bible: the West from the Reformation until the Present Day*, ed. A. L. Greenslade (Cambridge, 1963), p. 423.

<sup>8</sup> J. H. Leich, *De origine et incrementis typographiae Lipsiensis* (Leipzig, 1740), p. 17.

<sup>9</sup> Baldus de Periglis, *De quaestionibus et tormentis* (Paris, J. Bonhomme, 1475); *B.M.C.* viii, p. 12, pl. iir; Type 100b.

bastarda in having vertical stress and rather condensed letters with broken curves, so that in general effect it is close to the *textura*, but it has looped ascenders and the minuscules are in the *bastarda* convention. Nothing like uniformity was achieved in the design of capital letters; they include forms used also for French *textura* and Italian *rotunda*.

In the written state the French *bâtarde* is very handsome (as an advertisement (Fig. 46) of a writing-master at Nantes about 1460 witnesses),<sup>1</sup> and now and again a typeface captures some of its freedom and fluency by giving chief stress to oblique strokes, as Schwabacher does. Possibly the occasional typeface was cut in Germany. For the most part the *bâtarde* types are restrained and a little stiff.

Type of this fashion was used from about 1485 onwards by nearly all the printers of Paris, mainly for books in French but extensively for Latin too. There was much less insistence here than in Germany on giving a special dress to the vernacular literature. The *bâtardes* are familiar to us in the Parisian Books of Hours, both Latin and French, a series begun in 1488 and going on for nearly a hundred years.<sup>2</sup>

The Bodleian has a very nice vellum copy (Fig. 47) of some *Heures* printed by Philippe Pigouchet in a typical *ancienne bâtarde*.<sup>3</sup> There is no date in it. All the text books warn us against dating these Paris Hours in 1487 or 1488 simply because their almanacs are calculated for the years 1488 to 1501, as many are. Pigouchet began to print continuously in 1491.

Like the German vernacular faces the French *bâtardes* became common property by 1490. The use by other printers of types occurring in the books issued by Antoine Vérard might be explained by his being a publisher rather than a printer and putting his work out to other presses, but the phenomenon is not confined to them. Fortunately for the incunabulists who rely on

<sup>1</sup> Paris, Bibl. Nat. MS. latin 8685, described by Léopold Delisle in *Journal des Savants*, 1899, pp. 51 ff.

<sup>2</sup> A. W. Pollard, *Early Illustrated Books* (1893), p. 199.

<sup>3</sup> *Horae Virginis secundum usum Romanae curiae*. Bodl. 8° Rawl. 1092.

typographical evidence for appropriating books to particular presses the founts differ in body and there are variant letters, especially capitals; but between 1489 and 1501 five or six printers in Paris were equipped with founts reproducing virtually one set of punches. It is a reasonable inference that matrices were reduplicated. In 1496 a face made up of mixed Parisian sorts was in use by Dayne at Lyons.<sup>1</sup> Lyons, however, had excellent *bâtarde* types of its own, rather like the Burgundian in their exuberance, of which the anonymous Printer of the *Abusé en cour* (Fig. 48) had one of the best.<sup>2</sup> It has a sweeping tail to the small g, kerned so as to overlap preceding letters, and a certain abandon about the drawing of capitals.

Rouen was closely linked with Paris in typographical style. Le Forestier of Rouen begins to print in 1494 with a *bâtarde* that is also found at Paris in books signed by Vêrard, Le Rouge, Bocard, Laurens, Le Dru, Jehannot, and Kerver.<sup>3</sup> Le Talleur of Rouen, who was perhaps a punchcutter if his name is any guide, printed with two *bastarda* types peculiar to him, the smaller of a novel design inasmuch as the ascending and descending strokes are long in relation to the bowls of the letters. He used it in the editions of Littleton's *Tenures* and Statham's *Abridgement* which he printed for Pynson.<sup>4</sup> It had many special sorts for lawyers' abbreviations and may have been cut for these texts; it is, however, only a rough approximation to an English common law hand of the time.<sup>5</sup>

The *bâtardes* were the earliest French contribution to typographical design: the second, and much finer one, is the style of face that in English we call Black Letter. The French *textura*

<sup>1</sup> *B.M.C.* viii, pl. liiif, Type 97b. It appears to be basically the same as Vêrard's 98b and 95b (pl. xiiif), Baligault's 99b (pl. xxiiif), and Lambert's 95b (pl. xxviif).

<sup>2</sup> *B.M.C.* viii, pl. xliiif.

<sup>3</sup> *B.M.C.* viii, pl. lxiif, Type 83b. Cf. pl. xiiif, Type 89b; pl. xivf, Type 84b; pl. xxiif, Types 82b, 85b; pl. xxviif, Type 84b; pl. xxviiif, Type 83b; pl. xxxif, Type 83b.

<sup>4</sup> Duff, *Fifteenth Century English Books*, Nos. 275, 374; *B.M.C.* viii, pp. 390-1, pl. xlviif, Type 81b.

<sup>5</sup> A. Wright, *Court Hand Restored*, 9th ed. by C. T. Martin (1879), pl. xxvii, xxviii.

attained to its final shape not much before 1490. It is a more graceful and, typographically, better contrived letter than the *textura* types of Germany and the Low Countries. It has the advantage over them of being comparatively wide and, for all its formality, it has curves enough to relieve the stiffness of that order of type-faces. The capitals worked out and almost standardized by 1500 are ornamental and enliven the page without calling undue attention to themselves.

This was a Parisian letter, or perhaps northern French, for very likely workshops in Rouen were among the first to produce it. Its forerunner in French printing was a semi-formal *textura* which calligraphers in France of the fourteenth and fifteenth centuries had favoured even for the most ceremonious purposes. Its stressed strokes ended not in the diamonds of *textura quadrata* but in forward swings and there were continuous curves at the head of a, in the tail of g, and in the ragged r—the r that followed letters that had once been round. Nearly all the capitals, unlike the German, have fluent lines. A number of types for this rounded *textura* were used in Paris in the 1480s.<sup>1</sup>

The existence of the looped *bastarda* types, appropriate for humbler uses, probably tended to make the type designed for liturgies more formal. Soon after 1490 the French Black Letter was purged of its rotund elements and became a thorough *textura quadrata*, for all that it kept some curved strokes and had the forward impetus that makes reading easy and pleasant. When it is well printed, as it was by Gering and Rembolt in 1494,<sup>2</sup> this letter is a superb work of art: there is no character in it that does not delight the eye.

The French Black Letter was cut in big sizes for Missals, for example that (Fig. 49) by Higman and Hopyl for Utrecht in 1497;<sup>3</sup> and by that time smaller sizes had found their way into breviaries and Hours, and a small one occurs in notes. Some

<sup>1</sup> e.g. *B.M.C.* viii, pl. vF, Dupré 105G; pl. viF, Caillaut 130G; pl. viiiF, Marchant 107G; pl. xviF, Higman-Hopyl 110GA.

<sup>2</sup> In the Paris Psalter, Common of Saints, and Masses of the Holy Ghost, etc.: Hain 13505; *B.M.C.* viii, pp. 28, 29, pl. iiiF, Type 110G.

<sup>3</sup> Hain 11434; *B.M.C.* viii, p. 139, pl. xviF, Type 145G, pl. xviiF, Type 113G.



printers had very big textura faces, cast on a Double Canon and even a 5-line Pica. No other fashion of type had been rendered so big and so small:<sup>1</sup> it meant an expansion of the range of moulds needed for casting to limits that were hardly exceeded until the nineteenth century.

French liturgical printing was done in these types until the overhaul of such books by the Council of Trent, when the opportunity was taken to change to Roman.<sup>2</sup> During the first quarter of the sixteenth century the textura types served also for secular books in Latin by modern authors and sometimes for texts in French. The typefaces were long-lived: some cut within five years of 1500 were still in use fifty years later, as in the many service-books done in Rouen and Paris for England in the reign of Queen Mary. It would be difficult, owing to the paucity of research yet done in the French types of the early sixteenth century, to find out which style of faces carried the main burden of printing there; but it is doubtful whether the two indigenous fashions, *bastarda* and *textura*, equalled the Italian *rotunda* for the bulk of work done in them. Philippe Renouard's bibliography of Parisian books of the sixteenth century, now in course of enlargement and publication,<sup>3</sup> has begun to enlighten us.

Talking about the French Black Letter we in this country are on familiar ground. From 1490 until 1540 it was our national idiom in type, and in the half-century after 1540 we used mainly Flemish or Dutch imitations of it. I do not mean that London printers followed a French fashion in the early years: they bought French matrices. In the days before Caxton, De Worde, Lettou, and Machlinia had typefaces of Flemish cut, some of which are found in use in Flanders too.<sup>4</sup> Perhaps the Act of 1484

<sup>1</sup> It was the existence of gothic types on many bodies that made the French, unlike the Italian, printers require as much variety of sizes in the Roman. Guillaume Le Bé II wrote that De Colines 'a fait lettres de Gros Romain sur le blanc de lettres gotticques gros traict' ('sur le blanc de' meaning 'on the same body as'): *Le Bé Memorandum*, p. 15.

<sup>2</sup> Jacques Kerver printed the Roman Missal in 1577 in Roman: B.M. 845. e. 3.

<sup>3</sup> See p. 2, n. 1.

<sup>4</sup> Caxton's Type 3, De Worde's 6, Lettou's and Machlinia's 1, is Veldener's 125c

allowing foreign workmen to come here<sup>1</sup> saved English printers from looking abroad for matrices and allowed foreigners to bring them in; perhaps the spread of printing to Rouen about 1485 made that the most convenient source of supply. In or before 1490 Caxton got his eighth type, which is common to him and Vêrard and Levet of Paris; De Worde in 1493 began using his fourth, which is one used by Jean Dupré in Paris; his eighth, dating from 1499, is Morin's of Rouen; and so were Notary's first and second of 1496. Pynson's sixth, also of 1496, was Higman's and Hopyl's, and his seventh is also in the main one of theirs.<sup>2</sup> A lower-case l followed by ragged r deputizing for k in several early London founts<sup>3</sup> is evidence that not a single letter was cut and struck here.

Higman's and Hopyl's noble texturas are seen to advantage in the Sarum Missal printed by Pynson in 1500, which Gordon Duff thought the finest of our fifteenth-century books (Fig. 50).

French *bâtarde* and Italian rotunda had their parts to play in London printing, the *bâtarde* mainly for law texts in Norman French, and the rotunda on small bodies for compendious volumes in Latin; but it was a humble role as compared with the scope given them abroad. No doubt the textura as cut in France was the letter that the English regarded as their own and took to calling 'English' before the time of Moxon in the late seventeenth century.

The French Black Letter was not uncommon in the Low Countries either, during the sixteenth century. The region had its own textura, as we saw in connection with the Speculum Printer, black, intricate, and related to Cologne style in its capital letters. For some reason the printers of Holland and Brabant preferred the French fashion if the type were big. So you often find the local

(*B.M.C.* ix, pl. ivb); Caxton's Type 5 is Veldener's 114B (*B.M.C.*, loc. cit.). Both were used also by Brito at Bruges (T.F.S. 1909 qq, rr). De Worde's 7 (Duff, pl. xvii) is the 100G type of the Printer of the *Blaffert* and G. van Os (*B.M.C.* ix, pl. ivh) and the 106G of Pafraet (*B.M.C.* ix, pl. vH).

<sup>1</sup> E. G. Duff, *A Century of the English Book Trade* (1905), pp. xi-xii.

<sup>2</sup> *B.M.C.* viii, pl. xviii, Type 93G. See a note at the end of this chapter, p. 67.

<sup>3</sup> De Worde's 4 (Duff, pl. xiv), Lettou's and Machlinia's 1 (Duff, pl. xxiii), Pynson's 1 (Duff, pl. xxx), and his 4 (Duff, pl. xxxiv).

idiom in the text and the French one in the headings. Two French typefaces in particular were favourites there, a 2-line Great Primer and a Great Primer. The bigger is traceable back to the press of Simon Vostre in 1504<sup>1</sup> and the other was in use at Paris by 1506 by Wolfgang Hopyl and others: it is probably the Great Primer for which Hopyl had the punches included in an inventory of his goods taken after his death in 1522.<sup>2</sup> The two faces are on the title-page of a Missal which Hopyl did for Liège in 1515 (Fig. 51). They are magnificent types. Wynkyn de Worde, Rastell, and many other London printers had them and they were used for our English Bibles in folio. Quite early in the sixteenth century, about 1520, these two admirable typefaces were most skilfully copied in the Low Countries, copied with their defects (for some capitals are too small for the rest), and the copies were brought to England. The Great Primer served for the text of the Authorized Version of 1611 and for royal proclamations from the reign of Queen Elizabeth I until 1730. At the University Press here we still have the relics of a fount of this face bought in 1701.

I have said very little about Holland and Brabant, where a textura fashion of type became predominant by the end of the fifteenth century and maintained itself as the normal medium for the Dutch language until the middle of the seventeenth century. Just as Englishmen called Black Letter 'English' so Dutchmen and Flemings called it 'Duyts', meaning Germanic. I am the less concerned about leaving the Low Countries out of this survey for knowing that the study of their early typefaces is in good hands. Professor and Mrs. Hellinga have only lately published their comprehensive work on the incunabula, and a history and catalogue of all the sixteenth-century types of the Netherlands by Dr. H. D. L. Vervliet is due to appear within a month or so. I am fortunate in having been able to read it.

It would not be difficult to think of reasons for a contraction in the number of letter-forms made into type as time went on. I am

<sup>1</sup> Vervliet, *Sixteenth-Century Types of the Low Countries*, pp. 88, 106.

<sup>2</sup> H. Stein, 'Nouveaux documents sur Wolfgang Hopyl', *Bibliographie moderne*, 9 (Paris, 1905), pp. 178-93.

mainly concerned with one of them: the growth and organization of a trade in matrices. If it was possible, as evidently it was, to get matrices struck with one set of punches in places as far apart as Lyons, Paris, and London or Strasburg, Cologne, and Nuremberg, then there was a great inducement to do so. It saved the cost of having punches cut and the waiting-time incidental to it. Economy militated against variety.

There is reason to suppose that in the interests of economy printers forewent their prejudices in favour of local idioms. The whole of Germany adopted the upper-Rhenish or Franconian Schwabacher; in the Netherlands the Burgundian bastarda had only a short career and big types were brought in from France; England is a clear case of typographical indifferentism: the English *textura* was never made into type because French faces of a similar fashion were so readily available and so good.

Accordingly, the use of founts virtually identical in face by several printers at a time became quite common by 1490. It does not point to the existence of typefoundries as early as that: we have seen that they had not come into being half-way through the next century; but means had been found for distributing matrices over wide tracts of country well before 1500.

Medieval custom was restrictive of dealings away from home. Craft guilds allowed buying and selling only between fellow citizens, and, except in a few enlightened places, Venice and Lyons, printers had to belong to guilds or be matriculated in universities. But for the periodic fairs the development of printing would hardly have been practicable. The famous German printers whose names are recorded as among the visitors to the book fairs at Frankfurt am Main would very likely deal in matrices there, as Plantin did after them. Koberger of Nuremberg, Rusch, Flach, Grüniger, and Schott of Strasburg, Amerbach, Wenssler, Kessler, and Froben of Basle, Drach of Speier all went there.<sup>1</sup> An age-long

<sup>1</sup> A. Ruppel, 'Die Bücherwelt des 16. Jahrhunderts und die Frankfurter Bücher-messen', *Gedenkboek der Plantin-Dagen, 1555-1955* (Antwerp, 1956), pp. 146-65, at p. 157. Lists of participants are printed by Alexander Dietz, *Zur Geschichte der Frankfurter Büchermesse, 1462/1792* (Frankfurt, 1921).

habit of meeting at Frankfurt twice a year all manner of people connected with the book trade disposed German printers to get their type made there and accounts for the biggest typefoundry in Europe being situated at Frankfurt in the sixteenth, seventeenth, and eighteenth centuries.

*Note* (ref. p. 64, n. 2).

Caxton 8 (Duff, pl. x) = *B.M.C.* viii, pl. viF, Caillaut 112G; pl. xiiiF, Levet 113G; pl. ixF, Vérard 112G.

De Worde 4 (Duff, pl. xiv) = *B.M.C.* viii, pl. ivF, Dupré 112G; pl. ixF, Vérard 97G; pl. xiiiF, Levet 101B (capitals); pl. xixF, Mellier 96B (capitals).

De Worde 8 (Duff, pl. xviii) = *B.M.C.* viii, pl. lxviiiF, Morin 110G.

Notary 1 (Duff, pl. xix) = *B.M.C.* viii, pl. lxviiiF, Morin, 111G\*.

Notary 2 (Duff, pl. xx) = *B.M.C.* viii, *ibid.*, Morin 110G.

Pynson 6 (Duff, pl. xxxv) = *B.M.C.* viii, pl. xviiiF, Higman-Hopyl 111G.

Pynson 7 (Duff, pl. xxxvii) = *B.M.C.* viii, pl. lxviiiF, Morin 113G\*; pl. iiiF, Gering-Rembolt 110G; pl. xviiiF, Higman-Hopyl 93G. There are variant letters. A fount exactly matching Pynson's was used for Anianus, *Comptus* (Rouen, for Robert Macé, 1502): Bodl. 4° D 21 Jur.

## LATIN AND VERNACULAR

THE last of the gothic book hands to be made into type, the German Fraktur, was first seen in its typical form in the legends to Dürer's engravings in the *Triumphwagen Kaiser Maximilians*, printed in 1522.<sup>1</sup> The model was written by the Nuremberg calligrapher Johann Neudörfer and the cutting, in several sizes within a few years, was done by the wood-engraver Hieronymus Andreae. In his memoirs<sup>2</sup> Neudörfer wrote of Hieronymus:

Of all tradesmen wood-engravers (*Formschneider*) he was the most skilful and the chief; especially there was no other before him who cut letters so clean and correct in wood. I made him a model for Fraktur, which he cut in wood and afterwards on steel punches, and he reproduced the same hand in many sizes.

Neudörfer had made a workable book script of the elaborate designs rendered in type for the grandiose books planned by the Emperor Maximilian I. The first of them, made for the never-completed prayer book for the Order of St. George, which the emperor was going to lead into battle against the Turks, was cut by an Antwerp craftsman, Jobst De Negker, whom Maximilian sent to Augsburg to work with his printer, Hans Schönsperger.<sup>3</sup> It is a big type, as befitted a liturgy, but a bastarda of the refined and very skilfully written kind known to Germans as *Kanzlei*, chancery hand. The printing, so far as it went, was finished in

<sup>1</sup> Carl Wehmer, 'Hans Schönsperger, der Drucker Kaiser Maximilians', in *Altmeister der Druckschrift* (Frankfurt a. M., Schriftgießerei D. Stempel, 1940), pp. 61-79, at p. 79.

<sup>2</sup> *Des Johann Neudörfer Schreib- und Rechenmeister zu Nürnberg Nachrichten von Künstlern und Werkleuten daselbst aus dem Jahre 1547*, ed. G. W. K. Lochner (Vienna, 1875), p. 155; Karl Faulmann, *Illustrierte Geschichte der Buchdruckerkunst* (Vienna, 1882), pp. 279-83.

<sup>3</sup> Wehmer, *op. cit.*, p. 70. Reproduction in Updike, i, fig. 73.

1513. For the type of the *Teuerdank* (Fig. 53), printed by Schönsperger in 1517, a model was provided by the court secretary at Vienna, Vincenz Rockner.<sup>1</sup> The book was a chivalrous fantasy glorifying the emperor's journey to claim his bride, heiress to the domains of Burgundy. The fashion for adding *Schmörkel*, elephants' trunks, had come in; but, stripped of these extravagances, one can see that the *Teuerdank* type gave Neudörfer plenty to work on. The general character of Fraktur is already there, and if the extravagances can be disregarded it is a sound book type. The typesetting with all its kerning and suggestion of fine effects of penmanship is a marvel and does honour to Maximilian, who took the closest interest in the printing.

The Fraktur (Fig. 52) is a revolution within the gothic, expressing, as it does, a courtly taste of the highest secular majesty. Other typefaces in the bastarda convention were easy cursives: this is a frozen cursive, an upright and formal hand with a great deal of fine work in it. Instead of the blunt tops to the main strokes of the Schwabacher the straight ascenders of the Fraktur begin with tapered curves or forks, after the manner of some early English handwriting; instead of the oval cursive o this has an o with one straight side and a fractured curve at the foot; the capitals are cursive but penned with flowing curls and undoubtedly handsome.

The Schwabacher and the French looped *bâtarde* had associations with the mercantile level of society; the French type was known as 'lettre bourgeoise'.<sup>2</sup> Because of their popular associations they stamped vernacular literature printed in them with the character of inferiority.<sup>3</sup> The Fraktur was free of that taint, and it alone among gothic book faces withstood the invasion of vernacular letters by Roman and Italic until our own day.

Maximilian chose to glorify himself in German. It was a compliment to the mother tongue, but there is no reason to suppose that he wanted to dignify it by means of an improved

<sup>1</sup> Neudörfer, *op. cit.*, ed. Lochner, p. 155; Updike, i, fig. 74.

<sup>2</sup> *Le Bé Memorandum*, p. 14.

<sup>3</sup> A. Dain, *Les Manuscrits* (Paris, 1949), p. 69: 'La bâtarde, trop populaire, n'a pas résisté longtemps.'

typography. In France, on the other hand, the king intervened in typographical matters with precisely that end in view, and it so happened that his tastes were Italian.

The special advantages of Italy for producing graceful and legible typefaces did not become apparent until printing began at Venice. The first printed books there were finished in 1469. The labour came from the Germans' Inn, where foreigners had the privilege of exercising all manner of crafts exempt from the restrictions on foreigners, crafts, and trading that were generally in force at that time.<sup>1</sup> Printing was a thoroughly German occupation there for some years and had the benefit of nearly thirty years of German experience. The customers, however, were Italian, and among them were many who had preconceived ideas about the lettering appropriate for the texts that they needed. The latitude allowed to printers in Germany in the choice of styles for their typefaces is not apparent in Italy.

The humanists' copying hand used for the classics had reached a very high polish by the time that printing was introduced to Italy, and scholars and architects were much concerned with collecting epigraphs from ancient Roman monuments and thinking out rules for reproducing the lettering. The punchcutters working for Italian presses did so in a style in contemporary use by scribes, not, like their counterparts in Germany, in styles sanctioned by a long tradition that did not challenge criticism. The colophons of early Italian printers lay stress on the beauty of the type, a claim not often made elsewhere.

The Roman type of the first Venetian press (Fig. 54), that of John and Wendelin de Spira,<sup>2</sup> shows promise rather than mastery. The capitals represent the antique well enough, there are true serifs at the ends of thick strokes, and the little o is as round as the big one. But it is not done with a very sure hand: the punchcutter's skill failed him with g and the capitals are too big.

Precisely the same design was rendered with the needed improvements a year later in the Roman of Nicholas Jenson (Fig. 55).

<sup>1</sup> H. Simonsfeld, *Der Fondaco dei Tedeschi in Venedig* (Stuttgart, 1887).

<sup>2</sup> Updike, i, fig. 26; *B.M.C.* v, pl. xiv\*, Type 114R.



It remains unsurpassed as a type for quartos and small folios. The typographical medium could hardly hold more of the Italian Renaissance, the intense admiration for classical precedent in the capitals, the humanists' love of clarity and grace in the small letters.

There was little left for the makers of Roman type in Italy in the way of designing but to copy Jenson. That they did: a good thirty faces in use in various Italian towns before 1520 are modelled on his. He provided excellent patterns, too, for Greek<sup>1</sup> and for the gothic rotunda in which legal and scientific books and most theology were set.

Looking back one can see that it was Felice Feliciano who was responsible for the special excellence of Italian types and for making Italy the fountain-head of the main stream in typography. He and his like made the learned world conscious of the antique alphabet and began constructing its letters by reference to geometrical schemes. By doing so he almost made the waning Middle Ages believe that there were letters independent of carving and writing that could be conjured up out of nothing by using the right formulae and represented on any scale by a variety of techniques. In sober truth the old capitals look uncomfortable in the writing-masters' diagrams and it is they that construct the geometrical figures rather than the opposite. None the less, from the punch-cutter's point of view geometry was good: he was at liberty to use files and gravers to express the ideal forms and no longer obliged to copy the way in which penmen had tried to approximate to them.

I have said that the best masters of letter-cutting had the greatest respect for penstrokes and judged type by its fidelity to them. I am sure they were right; but now I am arguing that the man cutting in relief on steel and using his particular tools to produce mentally conceived images makes the best type; and I think this is right also. If both can be properly maintained it is because we think of the printer's Roman fount, which is made of disparate

<sup>1</sup> *Greek Printing Types, 1465-1927*, with an introduction by Victor Scholderer (British Museum, 1927), fig. 7; *B.M.C.* v, pl. xv\*.

elements, the one carved in hard material, the other written in ink on a smooth surface. Cutting in relief in steel is capable of giving letters the refinement that the stonemason achieves working in shallow recess; the minuscule letters must be married to the majuscules by giving them the same treatment, but their essentially calligraphic character must be preserved.

It is because he understood what I am trying to say so well and had such a skilful punchcutter that the Roman found that Aldus Manutius had made for Bembo's tract *De Aetna*<sup>1</sup> was decisive in shaping the printer's alphabet (Fig. 56). The small letters are very well made to conform with the genuinely antique capitals by emphasis on long straight strokes and fine serifs and to harmonize in curvature with them. The strokes are thinner than those of Jenson and his school and in this respect comply more nearly with the precept of Feliciano fixing the thickness at one-tenth of the length.<sup>2</sup> The balancing of the weight of capitals and lower case is helped by making the capitals line at the head with the undersides of the serifs of lower-case ascenders, not with their tops as Jenson's do. The letters look narrower than Jenson's, but in fact are a little wider because the short ones are bigger, and the effect of narrowness makes the face suitable for octavo pages. Bembo's tract is a quarto but set to a narrow measure. When the type came into use in 1495 or 1496 Aldus had not printed an octavo, but he may already have had it in mind to reduce the size of learned books.

This face, a small Great Primer, was used by Aldus for folio editions of the classics. By 1499 it had been given new, rather bigger but lighter, capitals, and with these it appears in the famous *Hypnerotomachia Poliphili*.<sup>3</sup>

This Roman of Aldus is distinguishable from other faces of the time by the level cross-stroke in e and the absence of top serifs from the insides of the vertical strokes of M, following the model of Feliciano. We have come to regard his small e as an improvement

<sup>1</sup> Hain 2765; *B.M.C.* v, p. 554.

<sup>2</sup> G. Mardersteig, 'Leon Battista Alberti e la rinascità del carattere lapidario romano del Quattrocento', *Italia medioevale e umanistica*, ii (Padua, 1959), pp. 285-307, at p. 299.

<sup>3</sup> Hain 5501; *B.M.C.* v, pp. 561-2; Updike, i, fig. 26.

on previous practice, and it is curious that he did not repeat it in the smaller face that he introduced in 1497,<sup>1</sup> not a very distinguished design, possibly bought ready-made. Aldus had three other Roman types besides, and they are to be found in the printing of his contemporaries. We must suppose that he was too busy with Greek to pay sustained attention to the design of the Roman.

In his foreword to a Dioscorides of 1499 Aldus wrote of the engraving in his house of what was necessary for printing in Latin, Greek, and Hebrew with types that he hoped everyone would admire.<sup>2</sup> He printed only one book with some Hebrew in it,<sup>3</sup> but he carried the Latin part of his programme on to the cutting of an Italic (Fig. 57). This he brought into typography in 1500 and used as his normal typeface for Latin and Italian for the rest of his life.

The Aldine Italic was not a newly invented idiom. A cursive more ceremonious and polished was being written by copyists and notaries at the end of the fifteenth century. It goes back seventy-five years to an earlier generation of humanists. It is like the copying hand of Niccolò Niccoli of the period 1420–30.<sup>4</sup> Niccolò was a scholar and he copied classical texts for his own use and the use of his friends. He wrote a quick and informal sloped humanistic script: only the capitals were carefully formed and followed the antique pattern. Other scholars adopted his style of writing and it persisted with little change until the time of Aldus.

He in 1500 was about to launch a series of classical texts in convenient small format—‘portable books in the nature of manuals’, he said.<sup>5</sup> They were intended to be personal possessions and obtainable at a price that could be afforded by studious

<sup>1</sup> *B.M.C.* v, pl. xl\*, Type 87R.

<sup>2</sup> Quoted in *B.M.C.* v, p. 561.

<sup>3</sup> *Introductio utilissima hebraice discere cupientibus* (1501?, John Rylands Library), according to A. Marx, ‘Some Notes on the Use of Hebrew Type in non-Hebrew Books, 1475–1520’, in *Bibliographical Essays: a Tribute to Wilberforce Eames* (1924), at p. 387. The *Hypnerotomachia Poliphili* has woodcut Hebrew and Arabic letters on fol. 68.

<sup>4</sup> B. L. Ullman, *The Origin and Development of Humanistic Script*, pp. 59–77 and fig. 29–39.

<sup>5</sup> In his foreword to Juvenal and Persius, *Satyræ* (Venice, 1501).

persons. I imagine that the script favoured by scholars for private reading seemed to him appropriate for these books: it savoured of learning and it was intimate. Previously the only small books, octavos and duodecimos and less, were religious, prayers and good advice; the classics were at least quarto. The projected series was a revolution in publishing: people were expected to carry about with them not only breviaries and Hours and the *Imitation of Christ* but Juvenal and Martial too. A departure from precedent in the type was appropriate, and I suppose that the Roman type associated with grand editions of the ancient authors seemed to Aldus too pompous for the pocket editions that he hoped would bring them into everyday reading.

The Italic was cut for Small Pica.<sup>1</sup> If Aldus hoped, as it is commonly said that he did, but he never said, that cursive letterforms would save space, he must have been disappointed by the result: a Roman type on the same body gets in just as much.

It is a beautiful and a legible typeface. The reduction in size of the capitals, in accord with the practice of writers of this script, seems to have been exaggerated by Aldus—the same fad is to be seen in his third Greek—and is the only feature of the type that is troublesome to us. The face was given a great many ligatures, at least sixty-five. Not only were c, t, f, and long-s joined to succeeding vowels and to some other letters, but double-c, double-t, ct, and st were so too. The joins are all-but imperceptible and cannot be said to contribute much to the flowing appearance of the page. The later imitators of Aldus copied his ligatures decreasingly.

The imitations are the best proof of the great esteem in which the type was held by the literate world. From the counterfeit Aldine editions printed at Lyons from 1502 onwards until the middle of the century Italian, French, and German punchcutters produced faces of the kind which were no improvement on the original and were of exactly the same design.<sup>2</sup> The success of the

<sup>1</sup> Perhaps following the copying hand of Bartolommeo di Sanvito as the model(?): James Wardrop, *The Script of Humanism* (Oxford, 1963), p. 35.

<sup>2</sup> Italian cursives in the same manner are reproduced and discussed in Luigi Balsamo and Alberto Tinto, *Origini del corsivo nella tipografia italiana del Cinquecento* (Milan, 1967), and in S. Morison, 'Towards an Ideal Italic', *The Fleuron*, v, pp.

type is very likely attributable in part to the success of the publishing of which it was a feature. The house of Aldus published the first series of books uniform as to format, the classics that people ought to have read, and reasonably priced; and it kept the texts in print. The Italic became a symbol of learned humanism, and in Italy, and to a less extent in western Europe as a whole, it made great inroads on the Roman.

Humanism, which gave its distinct quality to Italian printing in the fifteenth century, was a challenge to the rest of Europe which it had to meet in fashioning new types as in other things. Although its effects had been felt strongly in other countries before the end of the century they were felt mainly in brainwork, grammar and textual criticism: in handwork Italianizing tendencies affected fine and decorative arts that yet remained outwardly gothic. The attempt of Heynlin and Fichet to present elegant Latin at their press in the Sorbonne in Paris in Roman type had a limited appeal and their successors had to turn to gothic to make printing pay, as the first printers in Spain did also and, indeed, the first printers in Venice. The furthest that northern printers could safely go towards showing an awareness of a new frame of mind was to adopt gothic in the Italian style, the *rotunda*. Forgive me for repeating that the first text type of the kind was cut by Wendelin de Spira in 1472; it was copied at Cologne in the same year and appeared in the Low Countries in 1475; at Basle and Lyons it occurs first in 1477, at Augsburg and Nuremberg in 1478, at Paris in 1479, at Leipzig in 1481, and at London in 1499. These dates of adoption, apart perhaps from the first two, which may have been due to chance, mark the passage across Europe of a wave of admiration for Italy.

Roman type, with which as historians we are more concerned, is found only in editions of the classics or the writings of humanists

93-129, fig. 1-3. For the Lyons counterfeit and one of three Basle faces in the Aldine style, Marius Audin, *Histoire de l'imprimerie par l'image* (Paris, 1924), ii, fig. 247-9, 252; A. F. Johnson, 'Some Cologne and Basle Types', *Gutenberg-Jahrbuch* 1939, pp. 197-203; for similar types in the Netherlands, H. D. L. Vervliet, *Sixteenth-Century Printing Types of the Low Countries* (Amsterdam, 1968), pp. 68-70.

in classical Latin or in Italian. There are exceptions. The most striking is the case of the R-Printer at Strasburg. Besides his programme of publishing classical texts and modern commentaries on them, some in collaboration with Mentelin, starting in 1469,<sup>1</sup> he printed the Vulgate and medieval theology in Roman. It was only in the very last years of the fifteenth century that the presses of southern Germany, Basle, Lyons, and Paris began to invade the Italians' virtual monopoly of the Latin classics. Unless we include Aesop, pseudo-Cato, and some selections printed in Overijssel for schools,<sup>2</sup> regular printing of ancient authors did not begin north of the Alps until well after 1500. Pioneers in the use of Roman type among northerners were Johannes Amerbach at Basle, Koberger at Nuremberg, and Josse Badius at Lyons and Paris. Amerbach and Badius had spent some time in Italy.<sup>3</sup>

Amerbach was a well-educated man of a conservative and devout turn of mind. He accepted the New Learning inasmuch as he thought that better philology and textual criticism with a knowledge of Greek and Hebrew would strengthen Christianity. His editor was Johann Heynlin of Stein, one of the founders of the press in the Sorbonne, where Roman type was installed. Amerbach did not print pagan classics, but he issued modern texts in elegant Latin. In 1486 he published in Roman type an *Epistolare* by Joannes Philolphus (Fig. 58), described as 'elegantissimum'.<sup>4</sup> More adventurous was his setting in Roman the letters in the collected works of St. Ambrose in 1492<sup>5</sup> and the letters of St. Augustine in 1493.<sup>6</sup> This was to claim a mastery of language and style for these fathers that had not been claimed before for theologians, a stage in the growth of Christian humanism.

Koberger was a business man, owner of the biggest publishing

<sup>1</sup> V. Scholderer, *Fifty Essays in 15th and 16th Century Bibliography*, pp. 152-3.

<sup>2</sup> *B.M.C.* ix, p. x.

<sup>3</sup> P. S. Allen, *The Correspondence of an Early Printing House: the Amerbachs of Basle* (Glasgow, 1932); Ph. Renouard, *Bibliographie des impressions et des œuvres de Josse Bade Ascensius, imprimeur et humaniste, 1462-1539* (Paris, 1909).

<sup>4</sup> Hain 12970; *B.M.C.* iii, p. 749; Bodl. Auct. 4 Q vi 50.

<sup>5</sup> Hain 896; *B.M.C.* iii, pp. 753-4.

<sup>6</sup> Hain 1969; *B.M.C.* iii, p. 755.

concern before Plantin's a century later.<sup>1</sup> His editions of Virgil of 1492 and of Cicero and Juvenal in 1497 in Roman type may be regarded as an experiment to see whether he could compete with the Italians in work of the kind.

The series of Latin classics edited by Josse Badius begun in 1493 established learned printing in France and associated Roman typography with it. By the time of his death in 1535 he had edited nearly all the ancient Latin authors and had produced, mostly in collaboration with other printers and publishers, handsome editions of them.<sup>2</sup> His own press, the *Prelum Ascensianum*, set up in Paris in 1503, was made available to a number of publishers willing to finance editions of the classics for which he established the texts and sometimes provided large critical apparatuses, sometimes forewords. Koberger at Nuremberg was one of those who commissioned books from him. The very substantial body of work from his press, 700 editions, and the prestige of Badius as editor familiarized the French book trade with Roman type and banished any other kind of type from classical texts in that country.

As typographer he was not remarkable except in preferring the Roman. His material came from Italy, a big text face used before by Fabri at Turin and a small one used by Capcasa at Venice.<sup>3</sup> Commonly he set the displayed lines in a gothic rotunda with ornamented capitals and sometimes in a set of roughly-cut Roman capitals. There is little attempt at typographical harmony.

In the preface to his first published work, an edition of the speeches and poems of Philip Beroaldus (Fig. 59), professor of humane letters at Bologna,<sup>4</sup> Badius refers to type.

Because I thought most printing types unsuitable for such a choice work and saw how many books were spoilt and corrupted by the stupidity and ignorance of printers, I desisted for a while from my

<sup>1</sup> O. Hase, *Die Koberger* (Leipzig, 1885).

<sup>2</sup> Ph. Renouard, *Josse Badi* p. 60.

<sup>3</sup> *B.M.C.* vii, pl. xc v\*; Type 114R; *B.M.C.* v, pl. xxxviii\*, Type 80R; both probably deriving from Jac. Rubeus.

<sup>4</sup> Hain 2951; Bodl. Auct. 2 Q v 10.

undertaking [to publish the book], until I heard of the very high repute allowed by general consent to Johannes Trechsel, the German, who is extremely experienced in work of the kind and learned that he had bought an Italian type with which this collection could be printed agreeably and correctly.

It has gone down in typographical history that Badius called Roman type 'italica littera' because of the passage that I have translated; but it seems more likely that he only meant that Trechsel's Roman type was got from Italy.

The career of Badius as printer spans a long time, if we include the years from 1492 to 1503 that he spent as corrector to presses in Lyons and Paris, until his death in 1535. During the latter half of this spell of years Roman type for the classics and the New Learning had the support of a number of learned and influential printers, not only in France. Soon after 1500 we are in the age dominated by Erasmus. The first of his published writings appeared at Paris in 1495.<sup>1</sup> Erasmus had a decided and declared preference for Roman letters, as might be expected. He praised 'a handwriting that is elegant, clear, and distinct, representing Latin words by Latin elements', and he recommended letters on Roman coins as good models for capitals.<sup>2</sup> He was friendly with three of the best printers of his time, Aldus, Froben, and Dirk Martens of Louvain, and he corresponded over several years with Josse Badius, until, like so many of the humanists, they quarrelled.<sup>3</sup>

It would not do to claim much for Erasmus as an influence on printing, but his works that spread the New Learning and Christian humanism so widely, the New Testament with a new Latin version, the *Adagia*, homilies, paraphrases, colloquies, and the *Encomium Moriae*, must have put the Roman letter in a new light. The printers, and they were many, who scrambled into the market for his books were obliged to buy the right type for them,

<sup>1</sup> P. S. Allen, *Erasmus, Lectures and Wayfaring Sketches* (Oxford, 1934), p. 114.

<sup>2</sup> 'De recta latini graecique sermonis pronunciatione', *Opera*, i (Leyden, 1703), col. 924E, 926A; S. Morison, 'Early Humanistic Script and the First Roman Type', *The Library*, 4th ser. xxiv (1943), pp. 1-29, at p. 24.

<sup>3</sup> Ph. Renouard, *Josse Bade*, pp. 26-8.



and his books alone were enough to make Roman and Italic familiar wherever the Roman Catholic censorship did not prevent them from circulating.

In tracing the spread of the New Learning and the publishing begotten by it the presses of Basle, the upper Rhineland, and southern Germany would have to be dealt with at length. The work of the Basle printers, particularly of Froben because of his association with Erasmus, is well known, but the work of the German printers is not. However, from a strictly typographical point of view they are of a minor and not lasting importance of which I hope to say something in the last lecture—their style of Roman and Italic was a backwater from the main stream which went from Italy to France.

There are, indeed, good reasons for paying attention to typographical developments in France. One is that there Roman was adopted for the mother tongue at an early date; another, that the Parisian fashion of Roman and Italic as it was cut in the years 1530 to 1550 was so good that it came to be adopted in all parts of the world, so that the typefounders who had matrices for it supplied presses everywhere.

First the acceptance of Roman type for French. The Italians had never made a difference between Latin and the vernacular in print. Whether they thought of Tuscan, Genoese, and Venetian as varieties of Low Latin I do not know; certainly in Dante, Petrarch, and Boccaccio they had authors deserving the most dignified typographical treatment. Wendelin de Spira printed Petrarch and Cicero in 1470 in the same Roman type.<sup>1</sup> The French evidently felt differently about their language, and it was under stress from Italian example that they brought themselves to print it in the same way as Latin.

The earliest French text to be set in Roman is, I believe,<sup>2</sup> an epitome of Guillaume Budé's book *De asse*. This was printed at

<sup>1</sup> Hain 12753, 5257.

<sup>2</sup> So Mme J. Veyrin-Forrer kindly told me: *Summaire et epitome du livre De asse fait par le commandement du roy par maistre Guillaume Bude* (Paris, P. Vidoue for G. Du Pré, 1522), Bibl. Nat. J. 17030; B.M. 7756. b. 21.

Paris in 1522. Why this little *Summaire* was so treated I cannot tell, unless it was to please the king, who had ordered the translation (he could not read Latin). A reprint of 1527 was in the Italian style of Black Letter.<sup>1</sup> The next example was the result of deliberate policy. *L'Histoire de Thucydide, Athenien*, translated into French by Claude de Seyssel,<sup>2</sup> was printed by order of King Francis I in 1527. Josse Badius set it in Roman type. The colophon says that the king ordered the publication 'au prouffit et edification de la noblesse et soubiectz de son Royaume'. The translator in a preface writes of Thucydides' history that 'oultre la delectation qu'on peut prendre en la lecture d'icelle, [elle] est pleine d'enseignements et documents a qui les veut gouster et digerer et reduire a sens moral'. The king's private secretary had given Badius an order for 1,225 copies and fixed the price at 30 sous. Publication was on 10 August, and by 3 March next following 96 copies were sold.<sup>3</sup> It may be that potential buyers were put off by the Roman type. The king was determined: he dropped the price to 20 sous and directed Badius to proceed with *L'Histoire des successeurs d'Alexandre le Grand extraicte de Diodore Sicilien*, another translation by De Seyssel, to be 'of the same quality, paper, type, and format and of as many sheets' as the Thucydides. The second book came out three years later.<sup>4</sup>

These were two of four translations that De Seyssel had presented to Louis XII in 1510, and in the foreword to the last of them, the Universal History of Trogus Pompeius epitomized by Justinus, he proposes a programme for 'enriching, magnifying, and publishing the French language'.<sup>5</sup> The writer, a diplomat and ecclesiastic, finally archbishop of Turin under French occupation, recommends the literary use of French as an aid to national aggrandisement and the consolidation of the king's possessions.

The policy, one knows, was followed. Court proceedings in

<sup>1</sup> Bibl. Nat. Rés. F.1542; Bodl. Byw. K 9 13.

<sup>2</sup> B.M., C.79.c.8(2).

<sup>3</sup> E. Coynecque, 'Josse Bade et les traductions de Claude de Seyssel', *Bibliothèque de l'École des Chartes*, 55 (Paris, 1894), pp. 509-14.

<sup>4</sup> B.M., C.79.c.8(1), C.45.g.4.

<sup>5</sup> F. Brunot, 'Un projet d'enrichir, magnifier et publier la langue française en 1509', *Revue d'histoire littéraire de la France*, 1 (Paris, 1894), pp. 27-37.

French were made compulsory by the Ordinance of Villers-Cotterets of 1539 in the old kingdom of France, and as new accessions of territory happened it was extended to them. 'Le plaidoyer français' was a hardship to a large number of the people in France, who did not speak the language. Robert Estienne had difficulty in finding someone to put the legal terms in Budé's *Forensia* of 1544 into French.<sup>1</sup>

It is understandable that Roman type played its humble part in magnifying the vernacular: it was associated with the highest order of literature, that of the ancients. Then, King Francis had sponsored Italian decorative arts; his architects, interior decorators, sculptors, and painters were Italians. Furthermore, he patronized the New Learning, and he seems to have understood that good publishing and printing were part of it. The responsibility of him and succeeding French monarchs for the superior quality of typography in that country during two centuries is substantial, and fine printing everywhere owes much to them.

The credit for designing books and types that satisfied the desires of Francis I and his learned and enlightened advisers belongs primarily to Geoffroy Tory. The refinement of French typography dates from 1525, two years after a return of Tory from Italy.

The woodcut decoration in the Italian manner of the books associated with Tory<sup>2</sup> introduced into Parisian printing a fashion for lightness and delicacy, and it was this tendency in the cutting of letters and ornament that made the Paris style prevail in Europe as a whole. The royal privileges given to Tory for his *Hours* of 1525 (Fig. 61) and for his *Champ fleury* of 1529 (Fig. 62) recite that he had made and caused to be made illustrations and decorations in both the antique and the modern manners ('modern' meaning in a medieval tradition), and in the *Champ fleury* he speaks of cutting certain of the illustrations himself.<sup>3</sup> Since in his early years he had been a teacher of Latin grammar and had edited texts,

<sup>1</sup> *Ibid.*, p. 36.

<sup>2</sup> A. F. Johnson, 'Geoffroy Tory', *The Fleuron*, vi (1928), pp. 37-66, at pp. 40 ff.

<sup>3</sup> Johnson, *op. cit.*, pp. 46 ff.

Pomponius Mela in 1508, the *Cosmographia* of Pius II in 1509, Quintilian in 1510, it is rather strange that he started working with his hands in middle life. He had been twice to Italy, the second time for a stay of some five years, and had evidently experienced the importance of graphic art.

In a passage of the *Champ fleury*<sup>1</sup> he praises the Italians.

The Italians, who are supreme in painting and image-making, have always in their hands the compass and the rule. Therefore they are the most adept in all Christendom at working with the graver, in portraying nature, and at representing light and shade. . . . We find no one on this side of the mountains to be compared with the late Messire Leonardo da Vinci, or Donatello, or Raphael of Urbino, or Michelangelo. I do not mean to say that there are no great and good minds among us, but that there is a lack of the compass and the rule.

In one of a very few references to printing in that book he writes of the 'lettre Aldine', meaning, no doubt, the Italic, 'which is called Aldine because Aldus, the noble Roman printer working until lately at Venice, brought it into use. It is graceful because it is pale, and so is the cursive Greek, not written in capitals'.<sup>2</sup>

His *Horae* of 1525, with their Italianate-classical ornament, lightly outlined illustrations, and Roman type, are famous; so is the *Champ fleury*. The book is about Roman capital letters, how to draw them with geometrical aids and how in their proportions they are related to the human body. Fantasy enters into it largely in the form of classical allegory and there are citations from Greek and Latin authors of the kind that was customary then. He had observed the lettering on imperial monuments carefully, found things to admire in an inscription designed by Bramante,<sup>3</sup> and quarrels with Dürer's and Fanti's drawings of the letters.<sup>4</sup> His models expressed with the usual scaffolding of squares and circles are extremely good.

The *Champ fleury* is mentioned by many subsequent writers on lettering and printing, and there is reason to believe that it influenced typography very much—more, perhaps, than a more

<sup>1</sup> *Champ fleury*, 1529, fol. xxxiv<sup>v</sup>.

<sup>2</sup> Fol. lxxii<sup>v</sup>.

<sup>3</sup> Fol. lxxv.

<sup>4</sup> Fol. xiii.

level-headed approach would have done. The book was not aimed at the printing trade; printers' letters are barely alluded to, there is one reference to punches and matrices,<sup>1</sup> minuscule or lower-case letters do not come into it at all.

Tory is not credited by anyone with cutting punches for type; the faces in which the books with his imprint are set had become old-fashioned quite early in his career and their capitals do not conform with the designs in his book.

As a printer his credentials are a little dubious. He opened a shop and was described as bookseller in 1523,<sup>2</sup> and from 1524 onwards editions appeared giving his name or address in the imprints. In 1531 the imprints begin to affirm that Tory was the printer, not only the seller, of the books, a thing that in some instances is contradicted by typographical evidence.<sup>3</sup> The existence of a workshop in which he engraved or printed can first be inferred from a document of 1530.<sup>4</sup>

All the same, Tory was honoured in 1531 by an appointment as 'Imprimeur du roi', a title once assumed before by a printer who had died in 1493. Next year Tory published by command of the king the third of the translations by Claude de Seyssel, of *De evangelica praeparatione* by Eusebius of Caesaria. It was not well printed; several Parisian presses would have done it better.

Such an honour can only be explained by Tory's having established himself in the learned circle about the king as the reformer of the art of the book on humanist lines and as a leading advocate of French as a literary language. The royal lectors in Greek and Hebrew, forerunners of the Collège de France, had entered upon their functions the year before Tory's appointment and the reader in Latin eloquence followed a few years later.<sup>5</sup>

In 1530-2 letter-cutting for printers made a great advance in Paris, very likely as a result of Tory's teaching. Claude Garamond,

<sup>1</sup> Fol. xxxiv.

<sup>2</sup> Coyecque, *Actes*, No. 373.

<sup>3</sup> Johnson, 'Geofroy Tory', p. 63.

<sup>4</sup> Ph. Renouard, *Répertoire des imprimeurs parisiens*, ed. J. Veyrin-Forrer and B. Moreau (Paris, 1965), pp. 411-12 (perhaps only his deduction from Tory's imprints of 1531).

<sup>5</sup> Abel Lefranc, *Histoire du Collège de France* (Paris, 1893), pp. 107 ff.

in collaboration, as is probable, with Robert Estienne, produced the first of his famous Roman typefaces; Simon de Colines introduced his very similar Roman, which has been called his Terentianus type;<sup>1</sup> and Antoine Augereau began to print in two Roman faces of his own cut evidently inspired by the type in the *Hypnerotomachia* of Aldus.

All three of these punchcutters are said to have been at work for ten or more years by 1530, but if that is so the faces that they cut in earlier years have not been identified. De Colines was principally a publisher, but there is a tradition that he cut letters as well,<sup>2</sup> and the types that he used are peculiar to his press and that of his wife's first husband, Henry Estienne the elder.<sup>3</sup> They are good types, and when De Colines began printing about 1520 they were better than any in Paris. However, they were bold and black, and it was not until 1531 that he began to print with the Great Primer face of the Terentianus which has the light colour and precise cut and the truly inscriptional capitals characteristic of the French Renaissance book. It was the transition from copying Jenson to copying Aldus. Details distinguishing the new style are easy to see: the horizontal stroke in e, the reduction in the number of serifs on M, the stiffer leg of capital R.

The change that is apparent in the Roman design of De Colines, a change that can plausibly be put down to the influence of Tory, happened a year earlier in the work of Claude Garamond. He was by trade a punchcutter and, no doubt, a matrix-maker too, not a printer. By the time of his death in 1561 there was in general use a range of Roman types of uniform design distinguished by their graceful proportions and brilliance of cut (Fig. 63, 65) that was

<sup>1</sup> Paul Beaujon, 'The "Garamond" Types', *The Fleuron*, v (1926), pp. 131-79, at pp. 150-1; reproductions in S. Morison, *Four Centuries of Fine Printing* (1924), pl. 103-7.

<sup>2</sup> [Guillaume II Le Bé] *Le Bé Memorandum*, p. 15. Le Bé attributed three sets of matrices in his typefoundry to De Colines: S. Morison, *L'Inventaire de la fonderie Le Bé, selon la transcription de Jean Pierre Fournier (Documents typographiques français, i, Paris, 1957, pp. 18-20).*

<sup>3</sup> They were used by R. and C. Chaudière, successors to De Colines, and by Robert Estienne in Luigi Alemani, *La coltivazione* (Paris, 1546).

attributed to this artist by such trustworthy authorities as Christophe Plantin and Jacob Sabon.<sup>1</sup> There has been a tradition since his day that he was the greatest artist in letter-cutting for printers. Two Roman types belonging to this group, though in an early state, are to be seen in a little octavo, Cicero's *Oratoria partitiones*, printed by Robert Estienne in September 1530.<sup>2</sup>

Others of Garamond's series of Roman types made their appearance at intervals in the printing of Robert Estienne a little while before other presses took to them. Presumably the association of these two masters which led to their collaboration in producing the Royal Greek types from 1541 until 1550, for which there is documentary evidence,<sup>3</sup> began as soon as Estienne set up on his own as publisher and printer in 1526 and freed himself from the tutelage of De Colines, who was his legal guardian.

Garamond recut his typefaces about 1550, giving them firmer outlines, either making new punches or, as I think likely in many cases, softening the old ones and refashioning them if he could get the alterations that he wanted in that way. The new series is marked by a top serif on the right of capital M, where before there was none. His capitals look to me very like those in Tory's diagrams. A poetical epitaph for Tory composed about 1684 and embodying information from a descendant of his contains the phrase 'Garamundum calcographum principem edocuerit',<sup>4</sup> which may be true so far as design is concerned.

Augereau's Great Primer and Pica Romans are first seen in books that he printed in 1532.<sup>5</sup> They are very well made on the Aldine pattern. This printer cut one more Roman, for English body, and a Greek before his career was cut short by hanging in

<sup>1</sup> 'Plantinian Inventories', *passim*; the type specimen of Conrad Berner, 1592, reproduced in *Type Specimen Facsimiles, 1-15*, ed. J. Dreyfus (1963), No. 2. Also Guillaume II Le Bé (pp. 17-18), as in note 2 on p. 84.

<sup>2</sup> Le Havre, Bibliothèque municipale, R869. I owe the information to Mme J. Veyrin-Forrer.

<sup>3</sup> A. Bernard, *Histoire de l'Imprimerie royale du Louvre* (Paris, 1867), p. 8.

<sup>4</sup> J. de La Caille, *Histoire de l'imprimerie et de la librairie* (Paris, 1689), p. 99; P. Beaujon, 'The "Garamond" Types', p. 133.

<sup>5</sup> J. Veyrin-Forrer, 'Antoine Augereau, graveur de lettres et imprimeur parisien (vers 1485(?)-1534)', *Paris et Île-de-France, Mémoires*, viii (Paris, 1957), pp. 103-56

1534 on a charge connected with heresy. There is a tradition handed down in the family of Le Bé, typefounders in Paris, that Garamond had been apprenticed to Augereau.<sup>1</sup>

The work of two of these three very good artists died with them: only Garamond's survived and multiplied. This can be explained by his devoting a lifetime to cutting punches, apart from a brief excursion into publishing in 1545,<sup>2</sup> and selling matrices, seeing his types in print over many years and improving them in consequence. A record survives of a contract made in 1545 by a caster in Paris to supply a printer with a fount of Garamond's Long Primer Roman,<sup>3</sup> and by about that time many printers in Paris and some in Lyons were using his types. From 1555 onwards Plantin at Antwerp equipped himself with matrices for all sizes of Roman of Garamond's cut, excepting the smallest, Nonpareil, which Garamond never made. The university printers of Germany began using founts of these faces from 1550, and soon after 1570 the typefoundry of Jacob Sabon at Frankfurt was stocked with matrices for them and could even offer strikes.

Some of Garamond's types found their way to London: Petyt used one in 1538, and Reginald Wolfe had the big Canon Roman by 1542;<sup>4</sup> but they were uncommon here, probably because later in the century, when Roman and Italic types became usual, a French typefounder, Jérôme Haultin, worked in London supplying founts from matrices which he bought from his uncle, Pierre Haultin, in France.<sup>5</sup> What look like Garamond's faces in our Elizabethan books often turn out on closer acquaintance to be Haultin's.

Haultin has been greatly underrated. He cut a large number of type-faces besides being an admirable printer.<sup>6</sup> He extended the

<sup>1</sup> *Le Bé Memorandum*, p. 17.

<sup>2</sup> P. Beaujon, 'The "Garamond" Types', pp. 135-41.

<sup>3</sup> Coyecque, *Actes*, No. 3137.

<sup>4</sup> F. Isaac, *English and Scottish Printing Types, 1535-58, 1552-8* (Bibliographical Society Facsimiles and Illustrations, No. iii, 1932), fig. 15, 73.

<sup>5</sup> L. Desgraves, *L'Imprimerie à La Rochelle, 2: les Haultin (Travaux d'humanisme et Renaissance, xxxiv, Geneva, 1960)*, pp. xvii, xviii.

<sup>6</sup> See the reproductions in Desgraves, as above.



range of Roman typography by cutting a Nonpareil with an Italic to match it. He was an ardent Protestant; in 1567 he printed at Paris a pocketable single-volume Bible in French,<sup>1</sup> and evidently it was for it that he made his Nonpareils, used for the text of the book (Fig. 64) and bought afterwards by half the printers in Europe, including our Bishop Fell.<sup>2</sup>

Haultin is important, also, in the history of type-styles in Italy. His faces were the first in the French Renaissance manner to be used there. In 1557 Paul Manutius began using Roman, Italic, and Greek types by Haultin, and they occur in the printing that he did for the Venetian Academy.<sup>3</sup> Later he took them with him to Rome.<sup>4</sup> Before long the heavier Roman types of the early Italian presses gave way to more delicate faces imported from France or cut locally in emulation of them.

With the establishment of typefounding as a separate mechanical trade towards the end of the sixteenth century there came a tendency to restrict the output of typefaces. Not only did it help to standardize Roman and Italic as the normal for modern languages as well as Latin, it favoured the Parisian Romans and Italics as the ones in greatest demand. Garamond's Romans and the Italics of Robert Granjon, active from 1543 until 1589, remained in general use until the middle of the eighteenth century. After about 1580 for fifty years punchcutting was almost confined to exotics. If we take 1570 as the date for beginning a new era in typography, because of the rise of commercially organized typefounding, it corresponds fairly well with the supersession of gothic

<sup>1</sup> B.M. 3049.b.9.

<sup>2</sup> S. Morison, *John Fell, the University Press, and the 'Fell' Types* (Oxford, 1967), pp. 137-8, 142.

<sup>3</sup> A. F. Johnson, 'Some Types used by Paolo Manuzio', *The Library*, 4th ser. xix (1938), pp. 167-75. A French Pica Roman of Haultin's style is in P. Bembo, *Della historia vinitiana* (Venice, G. Scotto, 1552: Bodl. 3 Δ 107), and in Fr. Luisini's commentary on Horace, *De arte poetica* (Venice, sons of Aldus, 1554: Bodl. Auct. 2 R III 15). Haultin's Pica Greek, also, was used by Paul Manutius for Ptolemy, *Planisphaerium* (Venice, 1558: Bodl. Toynbee 687<sup>a</sup>).

<sup>4</sup> Alb. Tinto, 'I tipi della Stamperia del Popolo Romano, 1561-1570', *Gutenberg-Jahrbuch 1967*, pp. 26-38; H. D. L. Vervliet, *The Type Specimen of the Vatican Press* (Amsterdam, 1967), tables on pp. 42 ff.

in its one remaining stronghold in Italy and France, liturgy. The reform of service books by the Council of Trent was crowned by the issue in 1568 of the new Roman breviary printed in Rome in Roman type. The Missal followed two years later, also in Roman.<sup>1</sup>

Let me devote the remaining minutes to the inroads made by the Roman upon the gothic.

It should be borne in mind that in the sixteenth century and much of the seventeenth people wrote gothic. Their handwriting was akin to the English secretary. Only the more studious men cultivated a second handwriting specially for Latin.<sup>2</sup> It is understandable that being taught in school as Gargantua was, 'à escripre Gotticquement', they should reserve a familiar feeling for books in Black Letter. This accounts for the printing of breviaries at Venice in rotunda long after the Tridentine reform and of books of Hours in *bâtarde* at Paris until the last quarter of the century. In the Low Countries, Spain, and the British Isles resistance to romanization was, of course, much tougher, and in Germany and Scandinavia it was absolute. Needless to say of that time that religion entered into it.

The substitution of Roman for gothic type happened in Paris about 1540, in Lyons a few years later, at Rouen later still. It affected all classes of literature at much the same time, if we except liturgies, popular ballads, almanacs, and recipes. The Vulgate was printed in both styles at Paris and Lyons in 1540, and thereafter was always in Roman. St. Thomas's Latin *Enarrationes in quatuor Evangelia* were done in gothic at Paris in 1528 and his *Commentaria* on the Epistles in Roman in 1538. Gratian's Decretal in 1547 and Justinian's Institutes in 1548 were done in Roman. Hippocrates, printed at Lyons in Black Letter in 1535, was printed there in Roman in 1543.

French verse was romanized at much the same time. Jean Le Maire des Belges was about the last of the vernacular poets to be

<sup>1</sup> H. Bohatta, *Bibliographie der Breviere, 1501-1850* (Leipzig, 1937), No. 271; W. H. J. Weale, *Bibliographia liturgica: catalogus missalium*, ed. H. Bohatta (1938), No. 1160.

<sup>2</sup> G. Mentz, *Handschriften der Reformationszeit* (Bonn, 1912).

set always in gothic—as late as 1535. Translations from the classics and the Italians were, as we have seen, pioneers in introducing Roman type for French; but Boccaccio *Des nobles malheureux* was issued in gothic at Paris in 1538. It was, I think, crucial that Denis Janot, King's Printer for the French Language, set the first part of *Amadis de Gaule* in Roman in 1540,<sup>1</sup> because it was a book with a wide appeal.

Thus, Calvin's *Institution de la religion chrestienne* of 1541 was not singular in being presented in Roman type; and the fact that Calvinist printers in countries other than France, that is to say in Switzerland, Germany, the Low Countries, and Great Britain, were foremost in promoting the use of Roman type can be explained by their being refugees from France carrying with them the idiom of their country of origin.

The 'littera moderna' which Wendelin de Spira had felt obliged to reproduce in 1472 as a typeface for theology, law, medicine, and other sciences, lasted in Italy well into the sixteenth century, and where liturgical books are concerned, until the end of it. The use of this gothic rotunda for headings to texts in Roman was common, even for Latin classics (for instance Persius in 1520) and for texts in Italian, for instance, Dante in 1521.<sup>2</sup> A manual of arithmetic was done in gothic at Venice in 1525.<sup>3</sup> In devotional books it lasted longer, for instance the lives of Sts. Faustinus and Jovita printed at Brescia in 1534.<sup>4</sup> However, such books had also been done in Roman since the start of printing in Italy. Everything points to a conclusion that Italians did not feel strongly about the choice between gothic and Roman.

In Germany, on the other hand, the antipathy to the use of Roman for Germanic languages was prohibitive, and it extended to German-speaking Switzerland. The only progress made by this

<sup>1</sup> B.M. 12403.h.14(1).

<sup>2</sup> *Lo amoroso convivio* (Venice, G. A. de Lerlio), reproduction in [F. Ongania] *Early Venetian Printing* (Venice, London and N.Y., 1895), Nos. 202–3. Persius, *ibid.*, No. 201.

<sup>3</sup> *Italian Book-Illustrations and Early Printing, a Catalogue of Early Italian Books in the Library of C. W. Dyson Perrins* (1914), No. 245.

<sup>4</sup> *Ibid.*, No. 256.

style of letter in the German printing offices was an increased use for Latin. At Basle Bergmann von Olpe printed Sebastian Brandt's *Navis stultifera*, the Ship of Fools, twice in March 1497, the first time in gothic, the second in Roman.<sup>1</sup> A book of the kind that would a little earlier have been set in Black Letter, the *Ars memorandi*, was printed by Anshelm at Pforzheim in Roman in 1503,<sup>2</sup> and so was Symoneta, *De christiana fide et Romanorum pontificum persecutionibus*, printed by Nicholas Kessler at Basle in 1509.<sup>3</sup> The choice turned largely on the character of the writer: any of liberal opinions was apt to be set in Roman. A popular Latin book of directions for the use of simples, the *Ortus sanitatis*, was printed in formal German textura type as late as 1517 by Beck at Strasburg;<sup>4</sup> but by then the use of Roman for secular Latin was almost universal in Germany. So it was that the programme for Dr. Eck and Luther to dispute in Latin was set in Roman type by Rhau-Grünenberg at Wittenberg in 1519,<sup>5</sup> and it was the regular practice at Wittenberg from then on to set Luther's Latin writings in it.

In the Netherlands the readers of Dutch, who considered then that it was Low German, followed the German practice as to romanizing and bought Roman types from Germany, while those who spoke French adopted the French fashion. There were pioneers there in the use of Roman for Latin, Johannes de Westphalia, who set two works by humanist authors, Aeneas Silvius and Gasparinus Barzizius, in a Roman face as early as 1483,<sup>6</sup> and Dirk Martens, the friend of Erasmus, who took to Roman or Italic for the New Learning after the turn of the century.<sup>7</sup> Both printed at Louvain for a time, and Martens, though he moved to

<sup>1</sup> Hain 3750; B.M. IA 37941. Hain 3751; B.M. IA 37945.

<sup>2</sup> *Catalogue of a Collection of Early German Books in the Library of C. Fairfax Murray*, compiled by H. W. Davies (1913), No. 43.

<sup>3</sup> Bodl. S 8 9 Th.

<sup>4</sup> Fairfax Murray, *Catalogue*, No. 195.

<sup>5</sup> Bodl. Vet. D 1 e 257.

<sup>6</sup> Hain 152; CA \*33; B.M.C. ix, p. 141. Hain 2668; CA 773; B.M.C. ix, p. 157.

<sup>7</sup> Reproductions in W. Nijhoff, *L'Art typographique dans les Pays-Bas*.

Antwerp in 1502, served the Collegium Trilingue, the humanist foundation at Louvain, after it had been set up in 1519.

The printers at Antwerp were not slow to imitate the French example in their setting of French. The earliest text to appear in Roman was of 1529, an account of the reception of the Emperor Charles V at Bologna. The same man produced it in Dutch in the same year, but of course in Black Letter.<sup>1</sup> The harder step of introducing Roman type for Dutch was taken by Joos Lambrecht of Ghent. He was a punchcutter and typefounder as well as a printer, an engraver of seals and merchandise marks, a grammarian and a champion of the Flemish language; he was one of the rhetoricians who raised it to the level of literature. He began to print in 1536 using Black Letter, Roman, and Italic of his own make, besides some French type.<sup>2</sup> In 1539 he issued a volume of *Refereynen*, vernacular poetry to be recited by rhetoricians, in Roman.<sup>3</sup> In the preface he upbraids his countrymen for their boorishness in disliking the Roman type for their language. In the same year Latin *Adagia* with a Dutch version by Johannes Sartorius were printed at Antwerp in Italic and Roman.<sup>4</sup>

The weaning of the Dutch from Black Letter was very gradual, and there is still a demand for the Bible in it.<sup>5</sup> Plantin went on all his life setting Dutch in textura, and so did his son-in-law Raphelengius at Leyden until he died in 1598 and his sons after him until 1620. The real break came in the second quarter of the seventeenth century, when the masters of Dutch literature were romanized one by one. English was one of the foreign languages for which the printers of the Low Countries began to use Roman about 1530. Simon Fish's *Supplicacyon for the Beggars*,<sup>6</sup> printed at Antwerp in 1528, is an early instance.

<sup>1</sup> Vervliet, *Sixteenth-Century Printing Types of the Low Countries*, p. 59.

<sup>2</sup> Reproductions in Nijhoff, *op. cit.*; Vervliet, *op. cit.*, pp. 24-6, 61.

<sup>3</sup> W. Nijhoff and M. E. Kronenberg, *Nederlandsche bibliographie van 1500 tot 1540* (The Hague, 1919- ), No. 1785.

<sup>4</sup> Vervliet, *op. cit.*, p. 61.

<sup>5</sup> H. de La Fontaine Verwey in *Copy and Print in the Netherlands*, ed. W. Gs. Hellinga (Amsterdam, 1962), p. 26.

<sup>6</sup> S.T.C. 10883.

In England, Richard Pynson was the first to print in Roman. A sermon of Savonarola of 1509 from his press is the earliest example.<sup>1</sup> Thereafter this kind of type was commonly used for Latin if it savoured of the New Learning. In the 1540s it occurs quite often in short passages of English, chapter summaries, poems, and prefaces. Not one of the well-known historians of printing or publishing has committed himself as to the first book in English set wholly in Roman. The only treatment of the matter that I have found is by the admirably inquisitive E. P. Goldschmidt. In his Sandars lectures of 1949 he says: 'With great diffidence and as a starting-point for future discussions I suggest that possibly Robert Record's *Castle of Knowledge*, printed by Reyner Wolfe in 1556, may claim the distinction of being the first English book in Roman type.'<sup>2</sup> I have noticed one issued the year before: Leonard Digges's *Prognostication of right good effect . . . to judge the weather for ever*.<sup>3</sup> This came out a bare two years before the arrival in this country of the Geneva New Testament in Roman characters. That and the Geneva Bible of 1560 must have accustomed a great many Englishmen and Scots to the new letter. The officially-sponsored Bishop's Bible and its successor the Authorized Version of 1611 being Black Letter books, it is probable that Roman type had in British minds associations with puritanical Calvinism, or perhaps rather with dissent, for the Romanists favoured it too. As late as 1637 Archbishop Laud insisted on the Book of Common Prayer for Scotland being set mainly in Black Letter.<sup>4</sup> The last of our Black Letter Bibles was of 1640.<sup>5</sup>

<sup>1</sup> S.T.C. 21800; T. B. Reed, *History of the Old English Letter Foundries*, ed. A. F. Johnson, p. 40.

<sup>2</sup> E. P. Goldschmidt, *The Printed Book of the Renaissance* (Cambridge, 1950), p. 25.

<sup>3</sup> S.T.C. 6860; Bodl. 4° Z 58(1).

<sup>4</sup> J. Rushworth, *Historical Collections*, Part iii, vol. i (1692), p. 115.

<sup>5</sup> T. H. Darlow and H. F. Moule, *Historical Catalogue of the Printed Editions of Holy Scripture*, vol. i (1903), No. 436.

THE HISTORY OF TYPEFOUNDING  
AND PUNCHCUTTING

THE name 'typefounder' for a man who makes and supplies printing type contains in itself a certain amount of history. It means caster; but in recent usage it conveys punchcutter, matrix-maker, and mould-maker as well. Evidently it was casting, the humblest branch of the trade, that absorbed the others.

That was to be expected: when various trades are carried on in a factory, only an expert knows what they are; an average person is content to call the factory after its product. This is enough to explain how punchcutters, many of whom were independent contractors even in the nineteenth century, came to be regarded as a sub-species of typefounders. When industrial organization was at an early stage the several occupations contributing to the making of type were carried on separately or combined differently one with another and with callings outside the ambit of a typographer.

We have, then, to find out the history of typefounding before there was such a thing. In the fifteenth century there are faint signs of a pattern which becomes clearer as time goes on. Hans Dünne, the goldsmith, earns a hundred guilders from Gutenberg at Strasburg 'solely on account of printing'.<sup>1</sup> At Florence in the 1470s goldsmiths cut punches and make matrices for the convent at Ripoli.<sup>2</sup> At Strasburg a goldsmith's journeyman offers to justify matrices for Amerbach in Basle.<sup>3</sup> At Basle a caster grumbles about

<sup>1</sup> A. Ruppel, *Johann Gutenberg, sein Leben und sein Werk*, 2nd ed. (Berlin, 1947), p. 93.

<sup>2</sup> F. Roediger, 'Diario della Stamperia Ripoli', *Il bibliofilo*, ix (Bologna, 1888), p. 87; (1889), pp. 37, 39.

<sup>3</sup> *Amerbach-Korrespondenz*, ed. Hartmann, i, p. 33: Hans von Unkel to B. Amerbach, 24 Jan. 1493.

the matrices he is given to work with by a printer and is gone, to France, before a lawsuit about the matter comes on for hearing.<sup>1</sup> Two type-casters are recorded as resident in Lyons in 1498 and fifteen in the first half of the sixteenth century.<sup>2</sup> There are hints that some casters were dependent on a particular printer for custom: one named Guenet at the Fox's Tail was typefounder to Claude Chevallon at the Golden Sun.<sup>3</sup> That was about 1530 in Paris; after Chevallon's death in 1537 he worked for the widow Desbois. At any rate by that time the casters were resident: you could find them; the makers of punches and matrices still had to go about looking for work.

But I cannot tell you when casters began to own matrices. As I said before, in 1545 a caster in Paris undertook to supply a fount of the Long Primer Roman cut by Garamond.<sup>4</sup> Hubert d'Armillier, apprenticed in 1545 to Robert Granjon,<sup>5</sup> a caster of letters for printers, was in London by 1553,<sup>6</sup> and the introduction of Granjon's Italics to London printing at that time is likely to mean that d'Armillier brought matrices with him. Jérôme Haultin, 'letter caster for printers'<sup>7</sup> in London paid to his uncle Pierre Haultin, punchcutter at La Rochelle, large sums in 1575 and 1576 for matrices of bronze,<sup>8</sup> and to judge by the look of London books thereafter a great many of our printers bought founts of him. Soon after the middle of the century the more enterprising casters were equipping themselves with the capital assets.

In 1592 Frans Raphelengius at Leyden in answer to an inquiry told his cousin at Antwerp that Gabriel Guyot was a typefounder

<sup>1</sup> C. Stehlin, 'Regesten zur Geschichte des Buchdrucks bis zum Jahre 1500', *Archiv für Geschichte des deutschen Buchhandels*, xi (Leipzig, 1888), Nos. 735, 765, 790, 794, 800, 801.

<sup>2</sup> H. L. Baudrier and J. Baudrier, *Bibliographie lyonnaise* (Lyons, 1895-1921), vol. xi, p. 160; vol. i, p. 413.

<sup>3</sup> *Le Bé Memorandum*, p. 19.

<sup>4</sup> Coyecque, *Actes*, No. 3137.

<sup>5</sup> *Imprimeurs et libraires parisiens du XVI<sup>e</sup> siècle, d'après les manuscrits de Ph. Renouard*, i, s.v. 'Armillier' (p. III).

<sup>6</sup> E. J. Worman, *Alien Members of the Book Trade during the Tudor Period* (1906), pp. 13-14.

<sup>7</sup> Worman, *op. cit.*, pp. 28-9.

<sup>8</sup> L. Desgraves, *Les Haultin*, pp. xvii, xviii.



in Rotterdam but owned no matrices.<sup>1</sup> There is an inference that such a thing was abnormal. On the other hand, twenty years earlier it would not have been so: Thomas de Vechter and Ameet and Herman de Gruyter, Plantin's typefounders after 1580, were men in a small way, unlikely to have done more than cast in their customers' matrices. Provisionally, I would infer from the fact that printers went on buying matrices until the seventeenth century that, as a rule, casters had none or very few.

By 1556, the year after he set up in business as a printer, Plantin had four sets of matrices, in 1561 he had increased the number to twenty-five. By 1563 he had bought another ten from the sale of the effects of the deceased Garamond, and at the time of his death in 1589 he had matrices for some eighty faces, Roman, Italic, Black Letter, script, Greek, Hebrew, Syriac, and flowers besides.<sup>2</sup> So far as he could, he got them from the best French artists; but Black Letter was no longer being made in France, so he commissioned a range of it from Hendrik van den Keere of Ghent. In the Plantinian collection there are 4,000 punches that were made to the printer's order.<sup>3</sup>

Plantin never had a typefoundry in his house, though for a time he found it advisable to make typemetal and sell it to his suppliers of type.<sup>4</sup> Until 1568 his regular caster was François Guyot. He was a Frenchman denized in Antwerp since 1539 and a very skilful punchcutter and matrix-maker. He justified the strikes that Plantin bought in France and took charge of all the printer's punches and matrices and lost a few. Plantin had a high regard for him.

A broadside in the Folger Shakespeare Library (Fig. 67) is a type-specimen of Guyot's.<sup>5</sup> It can be identified as his by one of Plantin's inventories,<sup>6</sup> where a fragment printed with the Double Pica

<sup>1</sup> Museum Plantin-Moretus, Arch. vol. 95, p. 43.

<sup>2</sup> 'Plantinian Inventories'.

<sup>3</sup> H. Carter, 'Plantin's Types and their Makers', *Gedenkboek der Plantin-Dagen, 1555-1955*, p. 256. About 1,000 punches now at the Museum were not his.

<sup>4</sup> *Ibid.*, pp. 265-6.

<sup>5</sup> *Type Specimen Facsimiles 1-15*, ed. J. Dreyfus, No. 1.

<sup>6</sup> Museum Plantin-Moretus, Arch., vol. 43.

Italic is inserted and the ascription 'Ascendonica Cursive de Guiot' written against it. The other faces shown being similar in style, it is reasonable to attribute the whole to him. His bigger Romans came into Antwerp printing by 1547, the smallest Italic shown is known from 1552 onwards. Guyot died about 1570: this is the oldest specimen known by a man who was simply a typefounder and not a printer.

The marginal writing is in English and gives prices for matrices. The first reads: 'Justified with Instrument and all that [therto] belongethe 22 gulden makethe £2 13s. 4d.', 'instrument' being Dutch for mould.

These typefaces are found in all parts of Europe, excepting France, and Portuguese Jesuit missionaries took them to India and Japan.<sup>1</sup> Guyot spent the last year or two of his life in London working in John Day's house,<sup>2</sup> and his son Gabriel stayed on as a typefounder and perhaps a punchcutter for nearly twenty years.<sup>3</sup> The typefaces are common in English printing for a century and more: the biggest, the Canon Roman, is used for headlines in Shakespeare quartos and folios and in the Bible of 1611. Guyot's fancy for cursive forms for some Italic capitals gives a lot of trouble to conscientious bibliographers who note them as 'swash'. The types died out on the Continent long before they did so here, so that there is reason to suppose that the whole of Guyot's typefoundry was brought over to England. It would not be surprising if some of his matrices were to turn up here one day, and there is a set of them in Sweden.<sup>4</sup>

In another way, too, this is an epoch-making body of work. I regret that I have not been able to fit into these lectures the evolution of a modern Italic.<sup>5</sup> Guyot, as you see, matched his Double

<sup>1</sup> A. K. Priolkar, *The Printing Press in India* (Bombay, 1958), pl. 4; Makita Tominaga, *The Jesuit Mission Press in Japan* (Tenri Central Library Photo Series, ii, Tenri, c. 1955).

<sup>2</sup> C. L. Oastler, 'John Day, the Elizabethan Printer' (1965), Bodl. MS. B.Litt. d. 1087, p. 110.

<sup>3</sup> Worman, *Alien Members of the Book Trade*, p. 15 (Deise), p. 26 (Guyett).

<sup>4</sup> At Nordiska museet, Stockholm, Norstedt Collection, No. 99, 'Text Antikva' (the Double Pica Roman). Matrices for the capitals of the Pica Italic are there also.

<sup>5</sup> A supplement on that subject has been added (pp. 117 ff).

Pica and Pica Romans with Italics, evidently with an intention that they should work together. Nobody had done that before: Italic had been a text-letter alternative to the Roman. Guyot died in the year 1570,<sup>1</sup> and Plantin's casting was transferred to Van den Keere at Ghent and the matrices went there. This man was a punchcutter and he made matrices and moulds and cast type and moulded outsize letters in sand.<sup>2</sup> He kept a very exact account of all he did for Plantin in a book which is preserved at Antwerp.<sup>3</sup> He had a foreman caster and a staff: of Guyot we know only that he had sons.

There is a list of Van den Keere's own matrices made soon after he died in 1580.<sup>4</sup> He had twenty-seven sets, mostly from his own punches but also three for Romans by Garamond, six for Italics and one for music by Granjon, and two Romans by Ameet Tavernier, a capable letter-cutter of Antwerp. With that equipment Van den Keere's must be rated as a typefoundry of the new kind that relieved printers of the need to stock matrices themselves. Since he was active as a punchcutter early in the 1560s, his must be reckoned as one of the first of these modern establishments. Unfortunately the equipment was dispersed after his death, in spite of an offer from England for the whole of it.<sup>5</sup>

Two other typefoundries, in the modern sense of the word, had their origins at much the same time. In 1555 Christian Egenolff, printer at Frankfurt, died and his business passed to his widow.<sup>6</sup> It appears that for a long time Egenolff had cast type for his own and other presses and looked after matrices belonging to other printers. The widow relied on Jacob Sabon, a Huguenot from Lyons, to manage this part of the concern. Sabon made punches and matrices; he left Frankfurt for a time in 1563 and worked in Plantin's house finishing some sets of punches that Garamond had

<sup>1</sup> Vervliet, *Sixteenth-Century Printing Types of the Low Countries*, p. 27.

<sup>2</sup> *Ibid.*, pp. 30-1.

<sup>3</sup> *Museum Plantin-Moretus*, Arch., vol. 42.

<sup>4</sup> 'Plantinian Inventories', pp. 51-66.

<sup>5</sup> *Correspondance de Christophe Plantin*, ed. M. Rooses and J. Denucé, vi (Antwerp and The Hague, 1916), p. 206.

<sup>6</sup> [G. Mori] *Die Egenolff-Luthersche Schriftgießerei in Frankfurt am Main* (Frankfurt a. M., Schriftgießerei D. Stempel, 1926), pp. 14 ff.

left incomplete and making matrices for them and for ornaments.<sup>1</sup> Back in Frankfurt, Sabon succeeded after a struggle in marrying Egenolff's granddaughter, and when, in 1572, the typefoundry was settled on this lady as her share of the inheritance he became in right of his wife the master typefounder.

Before he died in 1580 Sabon had assembled a large stock of the best designs. He did not neglect Schwabacher and Fraktur, indeed he is credited with cutting some himself,<sup>2</sup> but his French taste and his business acumen prompted him to collect the work of Garamond and Granjon and the Nonpareils of Haultin until he could offer a complete range by those masters of the Parisian style. How he got these matrices is something of a mystery: the punches for some of them belonged to Plantin. It was this Frankfurt typefounder who received the Imperial privileges in 1575 and 1578 for his big alphabets cast in brass.<sup>3</sup>

Sabon's widow married Conrad Berner, whose *Specimen* of the foundry (Fig. 68) is known by a copy which existed until lately.<sup>4</sup> It is dated 1592, twelve years after Sabon had died, but it probably shows the collection much as Sabon left it. Broadside specimens like this are thought to have been designed for display in the booksellers' stalls at the Frankfurt fairs, and those issued by the Frankfurt typefoundry were always fine pieces of printing.

The advertisement at the foot is worth reading because it puts the case for a type-specimen on grounds that we should not expect.

Specimen and print of the finest and most beautiful types ever yet seen, assembled at great labour and cost at first by the late Christian Egenolff himself, the first printer in Frankfurt, and then by his widow,

<sup>1</sup> *Gedenkeboek der Plantin-Dagen, 1555-1955*, pp. 265-6.

<sup>2</sup> F. Bauer, *Chronik der Schriftgießereien in Deutschland*, 2nd ed. (Offenbach a. M., 1928), p. 50; R. Meldau, 'Reichsfreiheiten für den Frankfurter Schriftgießer Jakob Sabon, 1575 und 1578', *Gutenberg-Jahrbuch 1935*, pp. 205. 12.

<sup>3</sup> See above, p. 15.

<sup>4</sup> It disappeared from the collection previously owned by Dr. E. J. Haeblerlin about 1939-40, as I was told at the Universitäts- und Staatsbibliothek, Frankfurt a. M., where the collection is now. Reproductions in *Type Specimen Facsimiles 1-15*, No. 2; [G. Mori] *Frankfurter Schriftproben aus dem 16. bis 18. Jahrhundert*, reissued with an introduction by R. Diehl (Frankfurt a. M., Schriftgießerei D. Stempel, 1955), No. 3.

thereafter by his successors Jacob Sabon and Conrad Berner. Published for the benefit of all who use a pen, but more especially for the advantage of authors of printers' copy, so that they may judge in what type their work may best be done, but equally useful to type-casters and printers as showing what may be of service in every printing-office and business. Because German and Hebrew types are not quite so highly regarded, they and various of the Latin types are not shown here, though the best of them are available in plenty. Besides which you may have all manner of strikes, German, Latin, Greek, or Hebrew, for hire or sale, notwithstanding that all are kept at hand for casting. Set forth by Conrad Berner, 1592.

It is a splendid array of typefaces. The second line is in handsome Roman capitals, apparently copies by Sabon of some begun by Garamond which Sabon completed for Plantin.<sup>1</sup> Sabon cut twenty-three of them out of the thirty-five, so Garamond had not got far, though far enough to settle the design. The Romans are of all the sizes that Garamond made and have some additions by Granjon and Haultin. The Italics are a selection from Granjon's work. The Greeks are by Granjon and Haultin. The arabesque ornaments are Granjon's, the nondescript ones by Sabon. You will see that ascriptions to the two great masters, Garamond and Granjon, have been added, a proof that their names recommended Berner's wares to a literate public. His ascriptions have been much relied on in recent literature for the origins of the faces, so that it is disappointing that other sources of information show that two of them are wrong. The Pica (*Cicéro*) Greek is by Haultin, not Granjon. Plantin had matrices for this Greek, which appears first in Haultin's own printing, and ascribed it in his inventories to Haultin, whom he knew personally. Moreover the style is not Granjon's. The compiler over-simplified at least in putting Garamond's name to the 'Petit Canon' Roman. It seems to me possible that Granjon, in whose own printing it is common, worked over some lower-case punches by Garamond and mated them with a set of his own capitals;<sup>2</sup> but reliable authorities, Plantin and the second Guillaume Le Bé, identified it

<sup>1</sup> 'Plantinian Inventories', p. 18 (ST 3).

<sup>2</sup> *Ibid.*, pp. 17, 20 (LST I, 2).

as Granjon's Petit Canon.<sup>1</sup> The Nonpareil Roman and Italic, for which there is no attribution, are by Haultin.

Allowing for a mistake or two, this *Specimen* by Berner is a most welcome release from the anonymity of earlier typefounding. In this respect, however, it did not foreshadow more relief to come: later typefounders' sheets and books seldom gave names of punchcutters, probably because the compilers did not know them—the matrices had been through the second-hand market; and if they did make attributions, they are often unreliable. Even Plantin's inventories give wrong attributions sometimes.

The Frankfurt typefoundry continued until the late eighteenth century to be one of the main suppliers of type to central and northern Europe, and by far the best-equipped typefoundry in the world for abundance and quality. A succession of type-specimens shows the stock of the sixteenth-century Parisian faces declining gradually as much of it had to be replaced by imitations. The foundry passed in 1626 to Johann Luther, whose descendants carried it on until 1780. It came virtually to a standstill during the Thirty Years War, but revived after it, and from 1660 until about 1720 the material in the Luther Foundry would account for the bulk of the type used in Germany and Basle and for much of it in Holland.<sup>2</sup> Fell's friend Thomas Marshall, trying to buy matrices in Amsterdam to equip the press at Oxford, wrote in 1672: 'The Founders here being reasonably furnished with Matrices from Franckfort, the old van Dijke, &c. have no regard to cutting and justifying, unles perhaps to supply a Defect, or two.'<sup>3</sup> The Dutch typefounders got matrices from other sources too; but Marshall's words reflect the supremacy of the Luther Foundry in Germany and the Protestant north.

The third of the great typefoundries stemming from the late sixteenth century was that of Le Bé in Paris.<sup>4</sup> Guillaume Le Bé,

<sup>1</sup> *Ibid.*, p. 23 (LMA 6). A specimen with a note by Guillaume II Le Bé is reproduced in *Gedenkboek der Plantin-Dagen, 1555-1955*, following p. 248, fig. 4.

<sup>2</sup> [Mori] *Die Egenolff-Luthersche Schriftgießerei*, pp. 20-3, 33, 34.

<sup>3</sup> H. Hart, *A Century of Typography at the University Press, Oxford, 1693-1794* (Oxford, 1900), p. 166.

<sup>4</sup> S. Morison, *L'Inventaire de la fonderie Le Bé; Le Bé Memorandum*.

son of a papermaker, was bound apprentice to Robert Estienne, the great scholar-printer, in 1539 or 1540. In Estienne's house he learned among other things typesetting and punchcutting. In 1545 he left for Venice, where he cut Hebrew typesets and made matrices and moulds for Marcantonio Giustiniani and some other devotees of biblical and talmudic studies.<sup>1</sup> He came back in 1550 and spent the rest of his life in Paris cutting more Hebrew faces, music type, and some Romans.

I mentioned Le Bé before and quoted some of the remarks that he wrote in the margins of specimens now collected in two albums at the Bibliothèque Nationale. There are also some scraps (Fig. 69) of his work sent by his son to Plantin's son-in-law, Jean Moretus, soon after the old man's death in 1598.<sup>2</sup> What magnificent letters! Against the big face, more than an inch tall, the son has written: 'Lettre nommée double Canon, taillée de feu mon pere', and under the Hebrews: 'toutes lesdites trois lettres taillées par feu mon pere.' The old Le Bé also cut very pretty music for keyboard instruments and vocal scores. When Garamond died in 1561 Le Bé bought most of his punches and matrices,<sup>3</sup> and so began the formation of a big collection of the work of the best French masters. Le Bé traded in matrices and strikes; he sold some to Plantin and did business at the Frankfurt fairs.<sup>4</sup> Whether he also sold founts of type is uncertain; but no doubt he could arrange for founts to be cast in his material. We know well enough what typesets he could have supplied at the time of his death in 1598, because about twenty years later his son and successor in business drew up an inventory of the collection of which an eighteenth-century copy exists.<sup>5</sup> The number of faces, Latin, Greek, Hebrew,

<sup>1</sup> H. Omont, 'Spécimens de caractères hébreux', etc., in *Mémoires de la Soc. de l'hist. de Paris*, xiv (1887), pp. 257-64.

<sup>2</sup> Museum Plantin-Moretus, Arch., vol. 153, following fol. 20. See the letter from Le Bé to Moretus: *Supplément à la correspondance de Chr. Plantin*, ed. M. van Durme (Antwerp, 1955), pp. 252-3.

<sup>3</sup> Fournier l'aîné in *Le Mercure de France* (Paris), May 1756, pp. 121-6.

<sup>4</sup> See his son's letter to Moretus, cited above. Plantin bought a set of matrices for the 'Gros Romain' of Garamond from him at Frankfurt in 1573: Museum Plantin-Moretus, Arch., vol. 43<sup>1</sup>, 'Le voyage de Francfort'.

<sup>5</sup> S. Morison, *L'Inventaire de la fonderie Le Bé*.

and music, was 130, all of the sixteenth century. Like the foundry at Frankfurt, this one stocked largely the Romans of Garamond, the Italics of Granjon, and Greeks by Granjon and Haultin.

The Le Bé foundry went on until the French Revolution without much altering its stock in trade, apart from a steady deterioration due to breakages and replacements.<sup>1</sup> One or, perhaps, two of Le Bé's own Hebrews are all that is left, so far as I know, of this priceless material.<sup>2</sup>

By these typefoundries and by some smaller casters' workshops designs rendered by a very few letter-cutters were spread over Europe. From the mid-sixteenth century onward many typefaces are assignable to an origin and to an engraver. How far back can we go identifying these creative artists and the typefaces that they cut?

There is little about the engraving of letters on punches that is exclusively typographical. One thing that a general engraver has to learn is that the shoulders must be filed to a sharp angle with the face to prevent their producing type that needs a great deal of rubbing down after casting to make it fit close enough together. There is not much else. Look, for example, at some punches of William Caslon's (Fig. 70). He came to cutting punches for printers from engraving government marks on gunlocks.<sup>3</sup> Others had worked previously for mints or had engraved seals. Goldsmiths had to cut intricate symbols on punches to mark their wares so as to satisfy guild-regulations.<sup>4</sup> Hans Donne, goldsmith of Strasburg, who made punches for the mint at Baden in 1421 and for the mints at Frankfurt and Bingen in 1427,<sup>5</sup> would easily have adapted himself to printer's work, as Philippe Danfrie and

<sup>1</sup> For the last days of the typefoundry see Ellic Howe, 'French Type Specimen Books', *The Library*, 5th ser. vi (1951), pp. 28-41, at p. 32. An inventory of 1685 witnesses to its dilapidated state: Paris, Archives nationales, Minutier central, Ét. lxx, liasse 182.

<sup>2</sup> Hebrews 'Corps 22' and 'Corps 13' of Messrs. Deberny-Peignot of Paris.

<sup>3</sup> James Mosley, 'The Early Career of William Caslon', *Journal of the Printing Historical Society*, iii (1967), pp. 66-81.

<sup>4</sup> J. Boivin, *Les Anciens orfèvres français et leurs poinçons* (Paris, 1925).

<sup>5</sup> W. K. Zülch and G. Mori, *Frankfurter Urkundenbuch zur Frühgeschichte des Buchdrucks* (Frankfurt, 1920), p. 16.



Nicholas Briot, engravers to the royal mint at Paris, did in the sixteenth and seventeenth centuries.<sup>1</sup>

Archives furnish names of a few men who were letter-cutters and supplied something to printers in the very early days. Joost Burnhart of Basle, seal-engraver, made some letters for Bernhard Rigel, a printer, in 1472;<sup>2</sup> Hans Frank of Strasburg claimed to have cut a quantity of letters for Hans Winterheimer, printer at Basle, in 1476.<sup>3</sup> Frank was a 'Buchstabenschneider', cutter of letters; perhaps it is not certain that he or Andreas Corvus, 'inxisor literarum stampe', who is mentioned at Venice in 1496 and 1498,<sup>4</sup> cut steel punches and not big ornamental letters in wood. The archival material reviewed by Haebler for its bearing on early typefounding did not yield much.<sup>5</sup> The public records of Strasburg were burnt in 1870.

For bringing to light the printers who made their own type it is a question how literally we are to take the colophons that say so. How seriously are we to take the first of them that attributes skill in this art at the end of Peter Schöffer's edition of Justinian's *Institutes* of 1468? Here the poet's Latin elegiacs extol Schöffer's adroitness at engraving in relief as greater than that of the two men of Mainz named Johannes whom he joined as a partner.<sup>6</sup> The tradition in Mainz that Schöffer was a punchcutter persisted, and in 1541 Johann Arnold von Bürgel, a corrector of the press, asserted it in his poem in praise of printing.<sup>7</sup> The second Peter Schöffer, who was then living, was hardly better, Arnold said, as an engraver in relief than his deceased father, the first Peter. The case for Schöffer is strong, only weakened a little, I think, by the

<sup>1</sup> F. Mazerolle, *Les Médailleurs français du XV<sup>e</sup> siècle au milieu du XVIII<sup>e</sup>* (Paris, 1902), i, p. 210; H. Carter and H. D. L. Vervliet, *Civilité Types* (Oxford, 1966), pp. 24-30, 58-67.

<sup>2</sup> Stehlin, 'Regesten', No. 9.

<sup>3</sup> *Ibid.*, No. 15.

<sup>4</sup> *B.M.C.* v, p. xix.

<sup>5</sup> 'Schriftguß und Schriftenhandel in der Frühdruckszeit', *Zentralblatt für Bibliothekswesen*, 41 (Leipzig, 1924), pp. 81-104.

<sup>6</sup> H. Heidenheimer, 'Das Begleitgedicht zum Justiniani Institutiones-Drucke von 1468', *Gutenberg-Festschrift 1925* (Mainz), pp. 108-117; A. Wyss in *Zentralblatt für Bibliothekswesen*, 5 (1888), at pp. 268-9.

<sup>7</sup> Quoted by Heidenheimer, p. 114.

poet's affirming in the Justinian that Gutenberg and Fust were punchcutters too. Why, if so, did Gutenberg need the services of the goldsmith, Dünne, who earned from him 100 gilders 'solely on account of printing'? As for Fust, the capitalist controlling big sums of money, he does not fit well in this humble and laborious character.

Although his colophons do not make this claim for him, Nicholas Jenson has always been admired for the types used by his firm in Venice. There are some records about him, and they prove that he possessed punches and matrices for these types: they do not positively affirm that he was the cutter. Some beliefs about his earlier life may be due to a confusion of him with a Guillaume Jenson.<sup>1</sup>

A convincing colophon is that of a Virgil printed at Florence in 1472 to the effect that Bernardo Cennini, by general consent the pre-eminent goldsmith, and Domenicho his son, a youth of outstanding talents, cut the type in steel, cast it, and printed the book.<sup>2</sup> It is disappointing that the performance is indifferent and there is no sign that these two did better thereafter.

In the same year Bartholomew of Cremona claims quite as much in Latin couplets that may be rendered approximately as

Till envious time or cruel fate withhold  
The bronze-struck letters that thou dost behold  
Ageless Cremona will not lack renown.  
Bartholomew from sculptors wins the crown.  
Defer to him, ye printers; he alone  
Designs the prototypes and makes his own.<sup>3</sup>

How dared he say so at a time when, incunabulists tell us, every printer made his own type? The extreme position, Haebler's axiom that until 1501 the type of every press was unique, though sternly defended in principle as late as 1933 by Carl Wehmer

<sup>1</sup> M. Jacques Guignard briefly reported in *Bulletin de la Société des antiquaires de France*, 1945-47, p. 39.

<sup>2</sup> Hain 14707; *B.M.C.* vi, p. 617, pl. xlv\*.

<sup>3</sup> *B.M.C.* v, pp. 207-10.

against Ernst Consentius,<sup>1</sup> is a methodological fiction becoming more fictitious as time goes on. Elsewhere Wehmer calls punchcutting 'Goldschmiedearbeit', goldsmith's work,<sup>2</sup> and cites Johann Rynmann, goldsmith at Augsburg, who called himself in a colophon of 1502 'characterum Venetorum opifex', maker of Venetian-style type.<sup>3</sup>

I have quoted a colophon in a work printed by Johann Veldener at Louvain in 1476 praising among other things his skill at engraving in relief.<sup>4</sup> At Bruges, Jean Brito at the end of a book that he printed about 1477 invites the reader to admire the type that he has cut and boasts that

He found out all untaught the wondrous art  
And instruments not less to be admired.<sup>5</sup>

Here he evidently refers to typefounding, and I find his mention of instruments conducive to a belief in him.

Obviously these flowery testimonials in cramping metres must not be pressed too far. It is doubtful whether the versifiers were competent in the techniques of printing: for instance the man who praised Jenson as 'excultor librorum', engraver of books.<sup>6</sup> Taken at their face-value they prove that a few of the early printers cut the types in their books. Without backing from contemporary records it would be unsafe to infer from the similarity of other typefaces to theirs that they cut letters for other printers too.

The earliest punchcutter of whom there are satisfactory records is Henric Pieterszoon de Lettersnijder of Rotterdam.<sup>7</sup> He is one of five Dutch printers who added the qualification 'lettersnijder',

<sup>1</sup> 'Zur Beurteilung des Methodenstreits in der Inkunabelkunde', *Gutenberg-Jahrbuch* 1933, pp. 250-325.

<sup>2</sup> 'Stempelschnitt ist Goldschmiedearbeit': *Altmeister der Druckschrift*, at p. 70.

<sup>3</sup> G. W. Zapf, *Augsburgs Buchdruckergeschichte*, Part II (Augsburg, 1791), p. 8.

<sup>4</sup> See above, p. 13.

<sup>5</sup> *Le livre nomme Theodolet* (n.d.): Edinburgh, Nat. Library of Scotland. Reproduction in T.F.S. 1909rr.

<sup>6</sup> In the colophon of *Luctus christianorum* (Venice, 1471); Hain 10287; B.M.C. v, p. 168.

<sup>7</sup> B. Kruitwagen, 'De incunabeldrukker en lettersteker Henric Pieterssoen die Lettersnider van Rotterdamme, c. 1470-1511', *De gulden passer*, I (Antwerp, 1923), pp. 5-44.

cutter of letters or type, to his name in his imprints. In his case it is clear that founts precisely like those in his printing were used at many other presses. The first occurrence of one such type, Henric's English-bodied Black Letter, is in 1492, when it was used at Antwerp by Matthias van der Goes to print Jan van Remmerswael's *Sondaren troest*<sup>1</sup> and at much the same time by Jacob van Breda at Deventer.<sup>2</sup> Four years later it is found in a little book printed by Henric himself at Antwerp.<sup>3</sup> Before 1501 nine other printers had founts of the same face, including one at Cologne. After 1500 the number of printers in the Low Countries who had it is reckoned at forty-two, 60 per cent of the total for the first half of the century, besides two in Germany. Documents relating to Henric Pieterszoon, describing him as printer or letter-cutter, have been found in archives at Rotterdam, where he was in 1504, and at Delft, where he was from 1508 until 1511.<sup>4</sup> From 1517 onwards his son, Cornelis Henricx Lettersnijder, printed at the same address as his in the Fish Market at Delft.

Altogether five typefaces are ascribed to Henric because he used them and in two cases used them first. They appeared in Dutch or Antwerp books between 1494 and 1580, tailing off in frequency after 1560. The smallest, a Pica Black (Fig. 71), occurs in London in the printing of Day and of Waldegrave.<sup>5</sup>

Henric printed some fifteen books, most of them small. Father Kruitwagen, who revived his memory, suggested plausibly that they, or some of them, were issued to advertise his types. The popularity of his faces among printers may, I think, have been due partly to the excellent workmanship in the matrices he supplied to them. The set that Messrs. Enschedé at Haarlem have for the

<sup>1</sup> E. de Bom and H. Pottmeyer, 'De incunabelen of wiegedrukken van de Hooftbibliotheek der Stad Antwerpen', *Het Boek*, 8 (The Hague, 1929), pp. 161-210, at p. 188.

<sup>2</sup> J. W. Holtrop, *Monuments typographiques des Pays-Bas au XV<sup>e</sup> siècle* (The Hague, 1868), 66 (114) f. 2; W. and L. Hellinga, *The Fifteenth-Century Printing Types of the Low Countries* (Amsterdam, 1966), pp. 95-101.

<sup>3</sup> *Wapene Martyn*, CA 1026.

<sup>4</sup> Kruitwagen in *De gulden passer*, i, at pp. 21-3, 27-8.

<sup>5</sup> F. Isaac, *English and Scottish Printing Types, 1535-58, 1552-8*, fig. 87; F. Isaac, *English Printers' Types of the Sixteenth Century* (1936), pl. 79.

English Black I illustrated (Fig. 9) in the first lecture, and there is an incomplete one for the smaller, Pica, Black at the Museum Plantin-Moretus, equally well made.<sup>1</sup> Moreover, the availability of these well-cut faces in a typically Dutch tradition of Black Letter probably did much to fix that style of type in the affections of printers and readers, so that it became a national character for the Dutch language.

Aldus Manutius at Venice was coeval with Henric of Rotterdam. He was not a punchcutter, but it is clear that he guided and supervised the work. In the foreword to his Dioscorides of 1499 he writes of the engraving in his house of Latin, Greek, and Hebrew types.<sup>2</sup> In petitioning for an exclusive privilege for his Greek design<sup>3</sup> he refers to his 'two new methods' of printing that script, an expression implying that he involved himself in type-founding. He had spent more than six years in working out the best way to print Greek, he said in 1497, and in his petition he recites having had Greek letters of the utmost beauty cut for him and spending a large part of his resources on them. By imitating cursive and largely linked letters in these types Aldus was bringing something new into printing, a contemporary business hand. A critic of his day wrote that he had shown that the ordinary (*οἰκεῖος*) style of writing had a harmony and a compactness that were pleasing and he had done well not to produce another imitation of calligraphy.<sup>4</sup>

The authorship of the punches for the Italic of Aldus is ascribed with the printer's authority to Francesco da Bologna. At the end of his foreword to the Virgil of 1501<sup>5</sup> are the verses:

Qui graiis dedit Aldus, en latinis  
Dat nunc grammata scalpta daedaleis  
Francisci manibus Bononiensis.

<sup>1</sup> Numbered ST 84c.

<sup>2</sup> Hain 6257; B.M.C. v, pp. 560-1.

<sup>3</sup> R. Proctor, *The Printing of Greek in the Fifteenth Century* (Bibliographical Society Monographs, No. viii, 1900), pp. 99-100.

<sup>4</sup> Justinus Decadyos in his preface to *Psalterium* (Venice, not after 1498); Hain 13452; B.M.C. v, p. 563.

<sup>5</sup> A.-A. Renouard, *Annales de l'imprimerie des Alde*, 3rd ed. (Paris, 1834), p. 27; B.M., C.19.f.7.

(Aldus, who gave punch-cut current script to the Greeks, now, as you see, gives as much to the Latins, by the fabulous hands of Francis of Bologna.)

He does not say that Francesco made the Greek types; but Gershom Soncino said so in his dedication to a Petrarch of 1503.<sup>1</sup> After asserting that Francesco had not only designed and cut the cursive but had conceived the idea of it, Soncino claims that the punchcutter had been responsible for all the types that Aldus had printed and that he had made Latin, Greek, and Hebrew.

Francesco, whose family name was Griffio, turned printer himself in later life and printed pocketable texts in an Italic like those he had made for Aldus and Soncino. In his Petrarch printed at Bologna in 1516 he repeats the claims that Soncino had made for him and accuses Aldus of taking the credit for his work. He cut another type of the same design for Stagnino, used in a Dante of 1512, and probably one that Filippo Giunta had at Florence by 1515. He is believed to have died in 1518.<sup>2</sup>

Francesco, therefore, was peripatetic. After working in the house of Aldus he went to Fano at the call of Soncino, who wrote: 'assembled there were engravers of letters and printers'.<sup>3</sup> There was a congregation at Fano then of Jewish refugees from Germany,<sup>4</sup> so that funds would not be wanting for a large enterprise. One cannot help thinking that only a few printers who had ample financial backing could afford to give exclusive employment to punchcutters and matrix-makers.

Community of typefaces becomes particularly evident in Germany soon after 1500, and those faces that were common in Germany are found also in Italy, the Low Countries, England, Scotland, and even, during the first thirty years of the century, in France, a country that has rarely imported type or matrices. Mr. A. F. Johnson has done some hard work on the German types

<sup>1</sup> *Opere volgari* (Fano, 1503); Bodl. Don. f 6.

<sup>2</sup> A. F. Johnson, *Type Designs, their History and Development*, 2nd ed., pp. 93-6.

<sup>3</sup> In his preface to Petrarch, *Opere volgari*.

<sup>4</sup> A. Freimann, 'Die Familie Soncino', *Soncino-Blätter*, i (Berlin, 1925), p. 11.

of 1500 to 1540,<sup>1</sup> and has left it on record that as many as ten or twenty presses had founts made from the same set of punches during those years.

To my mind this acceleration of a tendency that had existed since about 1480 is bound up with, and probably largely to be explained by, the career and achievement of Peter Schöffer the younger.<sup>2</sup> So far as I am concerned, he is work in progress, and not all the books needed for carrying it further are available here. There are, however, grounds for supposing that his matrices were distributed over a bigger area than any man's up to his lifetime, and that he introduces the modern era of typesetting in which a very few punchcutters supply the total demand.

This was the man of whom the encomiast of printing, Johann Arnold of Mainz, wrote in his poem printed in 1541<sup>3</sup> that he excelled his father, the partner of Fust, at engraving in relief. Some five years before then Thomas Platter of Basle had bought strikes from Schöffer, and had matrices justified and type cast by him, and in his Autobiography<sup>4</sup> Platter describes him as a 'very fine artist in printing' and as having punches for all kinds of type. An inventory of Schöffer's belongings at Basle in 1544 included sixty-four files, all manner of tools for justifying, a furnace for smelting, and a centner of antimony. When he died, much indebted, three years later at Basle he left some fifteen boxes of punches besides matrices, strikes, and tools.<sup>5</sup> Unfortunately, the posthumous inventory does not specify the faces for which the punches served, beyond telling that some were for Fraktur, some for Greek, one set was for big *Kanzlei* letters for titles, and two were for 'majuscule capitals'.

<sup>1</sup> 'The supply of Types in the Sixteenth Century', *The Library*, 4th ser. xxiv (1943), pp. 47-65.

<sup>2</sup> G. Mori, 'Peter Schöffer der Jüngere', *Altmeister der Druckschrift*, pp. 81-8; A. Bruckner, *Schweizer Stempelschneider und Schriftgießer*, pp. 41-4; F. W. E. Roth, *Die Buchdruckereien zu Worms a. Rh. im xvi. Jahrhundert* (Worms, 1892).

<sup>3</sup> See above, p. 103.

<sup>4</sup> *Thomas und Felix Platter (T. Platters Selbstbiographie &c.)*, ed. H. Boos (Leipzig, 1878); extract in Faulmann, *Illustrirte Geschichte der Buchdruckerkunst*, pp. 325-8.

<sup>5</sup> Bruckner, *Schweizer Stempelschneider und Schriftgießer*, pp. 42-4.

These lists suggest that a great deal of Schöffer's time was spent in typefounding, and he must have left a mark on contemporary printing. Yet he was a printer too, though his output of books was not large. If it is known that a printer was also a punchcutter there is a strong likelihood that the types in his books were those that he cut himself, provided that the types had not appeared at other presses before the punchcutter-printer could have been active.

A book printed by Peter Schöffer at his native Mainz in 1512 is reported and another of 1513.<sup>1</sup> In that year he moved to Worms, where he printed mostly for Protestant sectaries. Tyndale's 8vo Testament in English was done by him in 1525 or 1526, and he has been credited with finishing the vanished 4to begun in Cologne.<sup>2</sup> A German Bible for the Mennonites of 1529 is the biggest of his books. In that year the sectaries were expelled from Worms and Schöffer went with the main body of them to Strasburg, where he printed, though not a great deal, during the next ten years.

Among the notable types tentatively attributable to Schöffer because of his own use of them and their occurrence in the work of printers with whom he was associated are two alphabets of Roman capitals (Fig. 73) closely modelled on the antique, one  $\frac{5}{8}$  in. the other  $\frac{3}{8}$  in. tall. It is safe to say that the smaller was cut for a book on the Roman remains at Mainz and in the surrounding country (Fig. 72).<sup>3</sup> It was printed by Schöffer's elder brother Johann at Mainz in 1520, and the epigraphs in it are set in these capitals. The book had been long in gestation, as learned works are apt to be, and the author had died in 1512 leaving it unfinished. Before it came out Johann Froben at Basle had appreciated the value of these letters for setting titles and began using them for the

<sup>1</sup> Emil Weller, *Repertorium typographicum* (Nördlingen, 1864), Nos. 737, 783.

<sup>2</sup> Francis Fry, *The First New Testament Printed in the English Language (1525 or 1526) Translated by W. Tyndale* (Bristol, 1862), pp. 7-11.

<sup>3</sup> Dietrich Gresmund, *Collectanea antiquitatum in urbe et agro Moguntino reperatarum*, ed. J. Hüttich (Mainz, 1520); Bodl. D 88 Art. See K. F. Bauer, 'Antiqua und Antike', *Gutenberg-Jahrbuch 1958*, pp. 16-19. Only one type for the epigraphs occurs in the book: bigger capitals in one plate are woodcut.



purpose in 1516.<sup>1</sup> A large number of other printers, Peter Schöffer himself among them, did the same. The larger alphabet, matching the other in style, followed much later and was favoured by printers at Basle. The smaller was very common in title-pages all over Europe until the early part of the eighteenth century.<sup>2</sup> They were the first titling letters that had a wide currency, an addition to the indispensable repertory of all but the most modest printing-houses. The item 'punches for two alphabets of *capitalen maiusculen*' in Schöffer's last inventory must, I think, relate to them.

The younger Peter Schöffer was in Venice in 1541 and 1542 and printed at least four books there. In one of them, a work by Raymond Lull,<sup>3</sup> he used an Italic of revolutionary design (Fig. 75), which Mr. A. F. Johnson has named 'the Basle Italic'.<sup>4</sup> Mr. Johnson found it first at Lyons in 1537, but thought it might have been set earlier by Herwagen at Basle in an edition of Galen in Greek for which the royal privilege for France was granted in 1536. This Italic shares with one cut in Paris by De Colines about the same time the distinction of departing from the Aldine pattern and being much nearer to the Roman in width and letter-formation. It was, moreover, the second Italic to have sloped capitals, the first being a little-known one confined to a press at Vienna.<sup>5</sup> The Basle face is undoubtedly in the direct line of descent of the modern printer's Italic. For all the ungainliness of some of its letters, this type was in great demand in Lyons and Basle and is also found in Frankfurt, Paris, Strasburg, London, Venice, and other cities of Italy. I have not yet found a book in which Schöffer himself used it less than six years after its first appearance; but I think the style and the area of its diffusion link it with him.

In 1529 at Worms Schöffer printed three books by Sebastian

<sup>1</sup> Unless there is a mistake in pl. 283 of S. Morison, *Four Centuries of Fine Printing* (1924) showing Erasmus, *INSTRV/TIO* [sic] *principis Christiani*. The date usually accepted is 1517: A. F. Johnson, 'The First Roman Titlings', *Penrose Annual*, xxxix (1937), pp. 57-9.

<sup>2</sup> It is in the specimen of J. H. Stubenvoll, typefounder of Frankfurt, 1714: [G. Mori] *Frankfurter Schriftproben aus dem 16. bis 18. Jahrhundert*, pl. 21.

<sup>3</sup> *De secretis naturae*: Bodl. 8° Σ 51.

<sup>4</sup> *Type Designs*, 2nd ed., pp. 109-11.

<sup>5</sup> *Ibid.*, p. 109.

Münster,<sup>1</sup> the former Franciscan turned Lutheran who was of the second generation of Christian Hebraists of modern times and perhaps the first of them to gain a respectable mastery of biblical Hebrew. One of the texts was in Hebrew, and Schöffer set it in two sizes of type which Johann Froben had been using since 1516. They represent the formal script of the Jews of central Europe, quill-made and as gothic as any Latin script. These two typefaces satisfied the needs of Hebrew printers at Basle for sixty years.<sup>2</sup>

The Roman in the same book was very common. Mr. Johnson<sup>3</sup> found it at fourteen German presses. It is frequent, also, in Basle printing, especially in that of Froben's successors; and so was an Aldine-style Italic which Schöffer had at Strasburg in 1530. The Italic spread beyond Germany into Paris and London, where De Worde and Wolfe among others printed with it.<sup>4</sup>

Greek punches were part of Schöffer's typographical bequest to posterity: he had pledged three boxes of them with Ambrosius Froben and Episcopius. Besides those, Herwagen had a set for the *Adagia* as security.<sup>5</sup> Erasmus wrote in October 1528 that the Adages had come out again and 'at his suggestion Froben had bought rather better Greek types'.<sup>6</sup> The Greek in the *Adagia* of 1528 is in the face that Ambrosius Froben had used for his edition of 1526, but that in the edition of 1536 is different. The Greek types used by the Froben house in the years 1525-40 were common in Basle and German printing; they were taken to Paris too and one of them was the first to be printed in England, brought to Cambridge by Siberch in 1521.<sup>7</sup>

The fragmentary accounts of a new Greek type acquired by the Froben firm are not easy to reconcile. Beatus Rhenanus wrote from

<sup>1</sup> Maimonides, *Tredecim articuli fidei Judaeorum*: Bodl. 8° M 25 Th. Seld.; *Instrument über den Monslauf; Erklärung des neuen Instruments*. See K. H. Burmeister, *Sebastian Münster, eine Bibliographie* (Wiesbaden, 1964), pp. 43, 45.

<sup>2</sup> Joseph Prijs, *Die Basler hebräischen Drucker (1492-1866)* (Olten and Freiburg i. Br., 1964).

<sup>3</sup> 'The Supply of Types in the Sixteenth Century', pp. 50-1.

<sup>4</sup> F. Isaac, *English Printers' Types of the Sixteenth Century*, pl. 2, 45.

<sup>5</sup> A. Bruckner, *Schweizer Stempelschneider und Schriftgießer*, p. 44 n.

<sup>6</sup> *Opus epistolarum Des. Erasmi*, ed. P. S. Allen, vii, pp. 515-16.

<sup>7</sup> F. Isaac, *English and Scottish Printing Types, 1501-35, 1508-41*, fig. 49a.

Schlettstadt, fifteen miles from Strasburg, in November 1526 that Johann Froben would soon be getting a fount of a new Greek from there enough for a small piece of work. He begs him not to pay more than other printers would be likely to pay for founts of it and not to buy the punches, since they are not of a very good design, though better than the Greek that Froben and many printers besides him had been using.<sup>1</sup> Whether this deal was concluded is doubtful, since no new Greek face is to be seen in the printing of Froben's successors until 1531, when two of them came into use. In 1529 Erasmus wrote that the new Greek type was not yet fit for use;<sup>2</sup> an expression which is likely to mean that Herwagen, Froben, and Episcopus had bought matrices. The smaller face is the Greek in the *Adagia* of 1536, and may be the one for which Schöffer pledged the punches with Herwagen.

Finally, Schöffer printed music (Fig. 76). He did an edition of the *Gesangbuch* of Walther the Mastersinger in 1525 while he was at Worms.<sup>3</sup> The British Museum has a pretty booklet of songs printed by Schöffer and Matthias Biener at Strasburg in 1536.<sup>4</sup> His was a music-type of the old-fashioned sort, needing two impressions. Perhaps for that reason, it was not, so far as I know, used by other printers: music-type needing only one impression was introduced about that time.

I do not know why Friedrich Bauer, the historian of German typesetting, affirmed that Schöffer acted as punchcutter and typesetter to Hieronymus Froben and Episcopus after leaving Worms in 1529,<sup>5</sup> because he did not cite the source of his information; but the fact that he pledged punches with them and their

<sup>1</sup> *Amerbach-Korrespondenz*, iii, No. 1162; V. Scholderer, 'Some Notes on Erasmus and his Printers', *Gutenberg-Jahrbuch 1962*, pp. 195-7. In his foreword to a New Testament in Greek (Strasburg, 1524) the printer, Wolfgang Köpfel, writes that the type he is using is new (Bodl. 8° T3 Th. Seld.).

<sup>2</sup> *Opus epist. Des. Erasmi*, ed. Allen, viii, p. 44: he would have liked to print a text in Greek, 'sed novi typi nondum erant satis apparati'.

<sup>3</sup> *Geystliche Gesangbüchlin, authore Joanne Walthero*, according to F. W. E. Roth, *Die Buchdruckereien in Worms*.

<sup>4</sup> *Fünf und sechzig teütscher lieder, vormals in truck nie usgangen*: B.M. K.8.i.9 (one voice).

<sup>5</sup> F. Bauer, *Chronik der Schriftgießereien in Deutschland*, 2nd ed., p. 8.

partner Herwagen argues strongly for a close business connection. The identity of types in the printing of Schöffer and the Froben firm favours it.

If I cannot identify the work of this punchcutter by logical proof, I still want to make the point that in the early part of the sixteenth century there was a man in Germany who produced a body of work with a stylistic likeness and succeeded in selling it to an unprecedented extent. It is not work of very high artistic quality; its success has to be explained in some other way: technical excellence of the matrices, good salesmanship at the fairs of Frankfurt, Strasburg, and Lyons, the prestige of the house of Schöffer.

This body of work bridges the gap between the almost complete anonymity of typefounding during the incunabula and the dominance of named French masters of letter-cutting from 1540 onwards. It is illustrated in little by a specimen-sheet of typefaces (Fig. 77) subscribed by Johann Petri of Nuremberg and dated 1525.<sup>1</sup> The Roman, Italic, and Hebrew are found in the books printed by Schöffer the younger and were very likely cut by him. There is no reason to suppose that it is more than a printer's specimen showing his stock of types. No typefounder would be proud of it; the type is in poor condition and the Greek in particular is badly justified and cast.

The period of the activity of this dimly and uncertainly discerned artist is dominated by religious controversy which brought about a change in the whole character of printing in a large part of Europe, especially in Germany. It brought hurry into the business and long hours of uninterrupted drudgery printing big editions of books and pamphlets succeeding one another without a pause and all eagerly waited for.<sup>2</sup> The amount of labour attracted to printer's work must have been so substantial as to give the industry a new

<sup>1</sup> Formerly in the collection of the Börsenverein der Deutschen Buchhändler, Leipzig; reproduced in G. Mori, *Das Schriftgießergewerbe in Süddeutschland und den angrenzenden Ländern* (Stuttgart, 1924), Tafel 9.

<sup>2</sup> A good idea of it can be got from a letter of 1557 about Bible-printing at Emden: J. H. Hessels, *Ecclesiae Londino-Batavae archivum*, ii (Cambridge, 1889), pp. 64-72.

start with lower standards of technical proficiency. Yet little of this shows in the product: the existing methods appear to have been adequate to take up the strain. Of any effect that the altered tempo and volume of printing may have had on typefounding there is no trace in records. No independent typefoundry is known to have existed in Germany until 1572, when Jacob Sabon took charge of that department of the business established at Frankfurt by Egenolff. In the printed page the only thing that shows is an increasing willingness to share typefaces. The problem of supplying an inflated demand was confined to matrix-making and casting: the printers of Lutheran and anti-Lutheran tracts were not concerned with the design of type and did not commission the cutting of new faces. However, the multiplying of existing designs by strikes and founts called for an expansion of typefounding of which we know nothing.

The bigger printing houses owned matrices. Sometimes they would supply founts or even strikes. When Froben wanted Greek type about 1526 he tried unsuccessfully to get it from the successors to Thomas Anshelm and from a person at Milan.<sup>1</sup> Luther was delighted that Melchior Lotter had got matrices from Froben; he wrote to Spalatin in 1519, 'Melchior Lotter has arrived furnished with very good matrices from Froben and is ready to set up a printing office for us'.<sup>2</sup>

That does not mean that Froben was a typefounder; he may, like Plantin in the next generation, have bought strikes for resale. As for casting, I know that in 1555 Christian Egenolff, the printer at Frankfurt, had a box of matrices for a big Italic and a mould for them and wrote on the box, 'Belongs to Wolfgang Köpfel'.<sup>3</sup> Köpfel was a printer at Strasburg who had died the year before. Either he could not get casting done nearer home or, perhaps more likely, left his matrices at Frankfurt so that he could get orders at the fairs for founts to be cast in them. That and the fact that

<sup>1</sup> Beatus Rhenanus, letter to Bonifacius Amerbach, 16 Nov. 1526: *Amerbach-Korrespondenz*, iii, p. 220.

<sup>2</sup> *Martin Luthers Briefwechsel*, ed. E. L. Enders (Calw and Stuttgart, 1887), 28.

<sup>3</sup> [G. Mori] *Die Egenolff-Luthersche Schriftgießerei in Frankfurt am Main*, illustration facing p. 16.

Egenolff was able to bequeath to his descendants a business that developed into a big typefoundry is enough to warrant his reputation as a printer who cast for others. Historians of printing make that claim for a number of famous presses, but on grounds that I have not been able to find out. Thomas Platter in his *Autobiography* gives the names of two men who cast for him when he set up his press in 1536 at Basle. They were not printers.

In 1534 Schöffer was asked by the common council of Strasburg if he could identify the printer of an offending book by the type in which the book was set. It was a Schwabacher. Schöffer answered that nearly all the printers in the Rhineland had this particular face and he could not identify a press by it.<sup>1</sup> If he could not, neither could I, nor could you, respected bibliographers, however many *Typen-repertoria* you had for the period. As soon as it becomes possible to ascribe given typefaces to named punchcutters, and so to give some coherent account of them, the faces come into such general use that they cease to be indexes to the presses that had them.

I have said a lot that illustrates the difficulty of specifying typefaces as I think it should be done ideally, by the name of the designer, the proper body for the face, and the family of scripts to which the face belongs or approximates. The difficulty is due to ignorance and to a great extent is insurmountable. Patient investigation in archives and libraries is pushing salients into the unknown here or there. Meanwhile I plead for all attempts to describe type in bibliographies and for reproductions to identify type that defies description. Students of typographical history get far too few opportunities to look at books. Therefore they are greatly indebted to antiquarian booksellers who reproduce pages in their catalogues, to such illustrated bibliographies as Nijhoff's *L'Art typographique dans les Pays-Bas* and Davies's of the Fairfax Murray collections, as to the recent Harvard College Library *Catalogue of French Sixteenth Century Books* for help in spending to good advantage the time they can spare for libraries.

<sup>1</sup> F. Ritter, 'Elsässische Buchdrucker im Dienste der Straßburger Sektenbewegungen zur Zeit der Reformation', *Gutenberg-Jahrbuch 1962*, pp. 225-33, at p. 231.

## SUPPLEMENT ON ITALIC

THE cursive Latin script that Aldus introduced for texts in 1501<sup>1</sup> as a type appropriate for compendious learned books went on being used for the small volumes issued by the press that he founded until it came to an end in 1597.<sup>2</sup> Very similar faces were made by his punchcutter, Francesco da Bologna, for himself and for other printers in Italy and another was cut for the counterfeit Aldine editions begun at Lyons in 1502.<sup>3</sup>

Aldus started the Italic on a career as competitor of the Roman for the favour of adepts of the New Learning; and its success in the earlier half of the sixteenth century is reason to think that it was regarded by many people as even more expressive than the Roman of the new cult of poetry and eloquence. Particularly in Italy, the country of its origin, it was commonly used to set texts in Latin and Italian.<sup>4</sup>

Apart from the deliberate imitations of the work of Aldus at Lyons, it was some twenty years before Italic took root outside the borders of Italy. Exceptions were four books issued by a press at Erfurt in 1510 in a roughly-cut letter of the Aldine style<sup>5</sup> and three sizes of an almost upright cursive used by Guillaume Le Rouge at Paris in 1512,<sup>6</sup> equally uncouth. Thielman Kerver of Paris printed the Hours of the Virgin in Italic in 1517.<sup>7</sup> The occurrences of Italic in France were rare and sporadic until Simon de Colines sponsored it in 1528.

<sup>1</sup> See above, p. 73. A little of the Italic was inserted in the frontispiece to his *Epistole ed orazioni* of St. Catherine of Sienna of 1500: Hain 4688; *B.M.C.* v, p. 562.

<sup>2</sup> A.-A. Renouard, *Annales de l'imprimerie des Alde*, 3rd ed. (Paris, 1834).

<sup>3</sup> See above, p. 74.

<sup>4</sup> 'In that country between 1500 and 1600 possibly as many books were set in italic as in roman': A. F. Johnson, *Type Designs, their History and Development*, 2nd ed., p. 102. In the catalogue of early Italian books in the library of C. W. Dyson Perrins, *Italian Book-Illustrations and Early Printing* (1914), those in Roman outnumber the Italic by 4 to 1.

<sup>5</sup> M. von Hase, 'Sebaldus Striblitia in Erfurt, der erste deutsche Kursivdrucker', *Gutenberg-Jahrbuch* 1936, pp. 94-7.

<sup>6</sup> H. Monceaux, *Les Le Rouge de Chablis* (Paris, 1896), ii, pp. 31-3. Reproduction in *The Fleuron*, v, p. 98.

<sup>7</sup> So Brunet, *Manuel du libraire*, 5th ed. v (1865), col. 1622, No. 191. Harvard,

In Germany the Aldine design was copied early in the sixteenth century. A Pica face of the kind (Fig. 79) was adopted by Froben at Basle in 1519.<sup>1</sup> Johann Schöffer at Mainz and Knoblouch at Strasburg had it in 1520.<sup>2</sup> It was probably one of the faces for which the younger Melchior Lotter brought matrices to Wittenberg from Basle in that year, for it is found in the printing done there from 1521 onwards.<sup>3</sup> Johann Petri of Nuremberg included it in the specimen of his types of 1525.<sup>4</sup> Christian Wechel was using it at Paris in 1529,<sup>5</sup> and it was in Lyons by 1528.<sup>6</sup> By 1555 it had reached London.<sup>7</sup>

This Pica Aldine Italic, of which Froben was the first user, occurs in the printing of Peter Schöffer the younger,<sup>8</sup> as well as in that of his elder brother at Mainz, and it appears likely that the punches for it were his work.

Two other German Italics in the Aldine manner gained a wide currency. One on English body, very like the Pica in style, is traced by Mr. A. F. Johnson to Cologne in 1525,<sup>9</sup> and, he says, it is found later at Basle, Bologna, Rome, Louvain, Paris, and London, besides various cities in Germany. The second, a Small Pica, of the same design, was used at Basle by Valentine Curio in 1526<sup>10</sup> and after him by Oporinus and Episcopius. At Lyons, Sebastian Gryphius had it by 1532.<sup>11</sup>

These Italics, closely modelled on the face cut for Aldus, were in

*French 16th Century Books*, ii, p. 388 (No. 300), refers to another by Kerver of 1514.

<sup>1</sup> For example, in Erasmus, *Enchiridion militis christiani*: Bodl. Antiq. f GS 1519/2. He had used a more roughly-cut Italic in the same year in *Ludus L.A. Senecae de morte Claudii Caesaris* and Erasmus, *Moriae encomium*: Bodl. Allen e 65.

<sup>2</sup> According to R. Proctor, *Index to Early Printed Books in the British Museum*, Part ii, sect. i, *Germany, 1501-1520*.

<sup>3</sup> A. F. Johnson, 'The Supply of Types in the Sixteenth Century', *The Library*, 4th ser. xxiv (1943), pp. 61 ff.

<sup>4</sup> See above, p. 114.

<sup>5</sup> He was using it by 1529: in Theophrastus, *De historia et causis plantarum* (Harvard, *French 16th Century Books*, No. 513).

<sup>6</sup> Sebastian Gryphius began to use Italic in that year: Baudrier, *Bibliographie lyonnaise*, viii, p. 46. His *St. Cyprian*, edited by Erasmus, also of 1528 (Bodl. Vet. E 1 f 117), is set in Froben's Aldine Italic.

<sup>7</sup> F. Isaac, *English and Scottish Printing Types, 1535-58, 1552-8*, fig. 101.

<sup>8</sup> Luigi Alemanni, *Opere toscane* (Venice, 1542): Bodl. Mortara 345.

<sup>9</sup> 'The Supply of Types in the Sixteenth Century', at p. 55. Reproduction in Mr. Johnson's *German Renaissance Title-Borders*, pl. 46.

<sup>10</sup> Nicholas Perottus, *Cornucopiae*: title-page in Constance Meade Collection, Oxford.

<sup>11</sup> *Petri Bembi opuscula aliquot*: Bodl. Crynes 543.



common use all over Europe until about 1545. Texts were set in them, they served for marginal notes to texts in Roman, and, sometimes, for variety on title-pages.

A fresh wave of Italian interest in the cursive came with the introduction to typography of the contemporary Roman chancery hands taught by Vatican scribes and by writing masters. The first of these types appeared in 1523. They were an Italian phenomenon, rarely seen in other parts of Europe. It was Ludovico degli Arrighi, called Vicentino, who launched the decorative cursive, the 'cancelleresca corsiva', in print.<sup>1</sup> This was an elaborate hand developed in the course of a century by professional calligraphers from the scholars' writing that had served Aldus as the model for his Italic. Arrighi provided patterns for the corsiva in his writing-manual, *La operina*, published at Rome in 1522.<sup>2</sup> His second book of the kind, dated from Venice a year later, *Il modo de temperare le penne*, has nine pages set in type.<sup>3</sup> It was the first of three cut to the design of Arrighi.<sup>4</sup> This was its only appearance: for some reason this first of his types was not used again.

The style of letter sponsored by Arrighi has a permanent place in printing for luxurious books and occasional pieces. It reproduces the most carefully-formed of Latin cursive hands—perhaps a slightly affected hand, tiresome to the reader because of the exaggerated length of ascending and descending strokes and to the typesetter and printer because the tips of these strokes project from the body of the type and easily break off.

Arrighi began a career as a printer in 1524 in partnership with Lautizio Perugia. In some ten months they produced at least twenty-eight small quarto editions,<sup>5</sup> finely printed and set in a beautiful Italic

<sup>1</sup> James Wardrop, 'Arrighi Revived', *Signature*, 12 (1939), pp. 26-46; 'The Vatican Scriptor', *Signature*, n.s. 5 (1948), pp. 1-28.

<sup>2</sup> A. F. Johnson, 'A Catalogue of Italian Writing-Books of the Sixteenth Century', *Signature*, n.s. 10 (1950), pp. 22-48.

<sup>3</sup> A facsimile was published by S. Morison and F. Warde: *The Calligraphic Models of Ludovico Arrighi, surnamed Vicentino* (Paris, 1926), with an introduction by Morison.

<sup>4</sup> Dr. Emanuele Casamassima regards the typefaces used by Arrighi as five: 'I disegni di caratteri di Ludovico degli Arrighi Vicentino', *Gutenberg-Jahrbuch 1963*, pp. 24-36. He makes distinctions in the faces used in 1524-5 and 1526-7 which I would treat rather as differences in the states of the types, limited to a few letters, *p*, *q* in the one case, *a*, *f*, long-*s* in the other.

<sup>5</sup> E. Casamassima, 'Ancora su Ludovico degli Arrighi Vicentino', *Gutenberg-Jahrbuch 1965*, pp. 35-42, at p. 38-41.

like that of *Il modo* but more elaborate and polished. The cutting of the type may be credited to Lautizio, a goldsmith with a reputation for cutting seals.<sup>1</sup> It has, for the first time in print, the capitals known in the trade as 'swash', calligraphic alternatives to the normal or Roman. There are variant forms for the letters with descending strokes, which in some of the books are straight, in others curved to the left. Six of the texts were written by Gian Giorgio Trissino, and for his books it was necessary to add sorts for epsilon and omega, because the poet was a spelling-reformer. He also required j to be used as a consonant instead of i and v for consonantal u, the first to sponsor this reform in printing.

The third of Arrighi's Italics is of a less exuberant design than the others and indicates, I think, the hand of another punchcutter. The ascenders and descenders are not given turned-over heads but serifs of the normal kind.<sup>2</sup> It is still a decorative letter inasmuch as the ascending and descending strokes are longer than is necessary to make them clearly readable, and it has the close spacing and sharp contrast of shading characteristic of the 'cancelleresca corsiva'. After Arrighi, Antonio Blado used it;<sup>3</sup> and it has been imitated in recent years by the Monotype Corporation, subject to a shortening of the projecting strokes. Arrighi began to use it in 1526.<sup>4</sup> He appears not to have survived the Sack of Rome in 1527.

More or less contemporary with Arrighi and Lautizio Perugino and a designer of type was Giovanantonio Tagliente.<sup>5</sup> His writing-book, first printed at Venice in 1524, has a long list of editions going on until 1678. He was probably responsible more than any other writing master for the spread of the Italian chancery hand over Europe as a whole. The last eight pages of Tagliente's manual are set in a type rendering the cancelleresca corsiva. The same type was used for his *Luminario di*

<sup>1</sup> S. Morison, 'The Art of Printing', *Proc. of the British Academy*, xxiii (1938), pp. 373-408, at p. 382.

<sup>2</sup> Wardrop, 'Arrighi Revived', fig. 6. Mons. André Jammes has added one, of 1527, to the list of books printed by Arrighi in this face: 'Un chef-d'œuvre inconnu d'Arrighi Vicentino', *Studia bibliographica in honorem Herman de La Fontaine Verwey* (Amsterdam, 1966 [1968]), pp. 297-316.

<sup>3</sup> Luigi Balsamo and Alberto Tinto, *Origini del corsivo nella tipografia italiana del Cinquecento* (Milan, 1967), pp. 137-8.

<sup>4</sup> E. Casamassima, 'Ancora su Ludovico degli Arrighi Vicentino', pp. 41, 42.

<sup>5</sup> James Wardrop, 'A Note on Giovanantonio Tagliente', *Signature*, n.s. 8 (1949), pp. 57-61.

*arithmetica* of 1525.<sup>1</sup> In design it differs hardly at all from Arrighi's third, but it is rather more condensed and inclined.

Between Arrighi's presumed death in 1527 and the middle of the century, when Italian printers began buying matrices from France, more types of the cancelleresca fashion were cut,<sup>2</sup> some of them almost upright and all with upright capitals. It was a style of type confined to the bigger bodies and unsuited to economical printing. Italics of the Aldine design were always more common.

In the long run the real importance of the Italian chancery types has lain in their contribution to the shaping of the modern Italic. The blending of them with the Aldine to produce the Italic to which we are accustomed was mainly the work of French punchcutters.

Simon de Colines of Paris began to use Italic in 1528.<sup>3</sup> His first was a cursive on Pica body with turned over heads to the ascending strokes like those of Arrighi and Tagliente.<sup>4</sup> Later, in 1533, he turned to two smaller Italics in the Aldine convention, Bourgeois and Brevier, which he used in a series of compendious Latin classics evidently modelled on those of Aldus, beginning with Martial.<sup>5</sup> In 1536 he took to a big, Great Primer face like Arrighi's third with straight ascending strokes but decidedly of the Italian chancery style.<sup>6</sup> There is a tradition, handed down since the sixteenth century, that De Colines cut punches.<sup>7</sup> He appears not to have sold his types, for they do not, so far as I know, appear at presses other than his and that of his successors Regnault and Claude Chaudière.<sup>8</sup> His typefounding and his printing, especially in his later years, were very good. His prestige as one of the leading publishers of his time was enough to establish both kinds of Italic, those of Aldus and of Arrighi, as part of the French Renaissance manner of printing.

In 1537, a year after De Colines had begun to print with his Great Primer Italic, one reminiscent of it (Fig. 81) was adopted by Sebastian

<sup>1</sup> S. Morison, 'Towards an Ideal Type', *The Fleuron*, ii (1924), pp. 57-75, Fig. 11 at p. 65.

<sup>2</sup> Balsamo and Tinto, *Origini del corsivo*, pp. 149-64.

<sup>3</sup> Ph. Renouard, *Bibliographie des éditions de Simon de Colines, 1520-1546* (Paris, 1894), p. 112.

<sup>4</sup> Reproduced in S. Morison, 'Towards an Ideal Type', fig. 13.

<sup>5</sup> A. F. Johnson and S. Morison, 'The Chancery Types of Italy and France', *The Fleuron*, iii (1924), pp. 23-51, fig. 11.

<sup>6</sup> 'Towards an Ideal Type', fig. 15.

<sup>7</sup> [Guillaume II Le Bé] *Le Bé Memorandum*, p. 15.

<sup>8</sup> And in Luigi Alemanni, *La coltivazione* (Paris, R. Estienne, 1546).

Gryphius at Lyons.<sup>1</sup> It is the face that I spoke of earlier as being possibly the work of Peter Schöffler the younger.<sup>2</sup> It was novel in having inclined capitals<sup>3</sup> and a greater distance between letters than was usual with cursive types. It is a strange piece of work: although the drawing of the lower case seems to me to indicate imitation of De Colines, the total effect is quite different, much less skilful, but more legible because of the wider intervals between the sorts. It is curious, also, inasmuch as in the work of many printers, though not those at Lyons, the face appears with its capitals absurdly erratic in their inclination, owing to bad judgement on the part of the justifier.

Smaller, lighter capitals of the same design are found in titles and headings at Basle rather later.<sup>4</sup>

It may be that this Great Primer Italic started on its career at Basle in a monumental edition of Galen not finished until 1538.<sup>5</sup> It soon achieved a remarkably wide distribution—wider than its quality would seem to have earned it: it was easy to read.

An advance in legibility combined with grace of the letter-forms may be claimed for another Great Primer Italic (Fig. 82) introduced at Paris about 1539.<sup>6</sup> It appears to be an early state of a face which, as refashioned some 15 years later, is reliably ascribed to Garamond.<sup>7</sup> In refashioning it Garamond gave it sloped capitals, and in its reborn state (Fig. 83) it is a very elegant Italic of a thoroughly modern cut, perhaps the first of the Old Face Italics that we are used to read. That is to say that it is a blend of the Aldine and the Italian chancery designs, not without an attempt to make it harmonize with Roman in curvature and colour. The Great Primer Italic probably by Garamond was very

<sup>1</sup> e.g. in Salmonius Macrinus, *Odae*: Bodl. Antiq.fF 1537/1. The reproduction in Marius Audin, *Histoire de l'imprimerie par l'image* (Paris, 1929), ii, fig. 259, dated '1528', is of Gratius and other poets on hunting, ed. by Georgius Logus, printed by Gryphius in 1537: B.M., 11388.aa.16.

<sup>2</sup> See above, p. 111.

<sup>3</sup> There was a single precedent, the type of Singrenius at Vienna (1532) and Nicholas Schmidt at Leipzig (1537): A. F. Johnson, 'Early Italics in the German Empire', *The Fleuron*, vii (1930), pp. 145–50, with reproductions.

<sup>4</sup> e.g. in J. L. Vives, *De veritate christianae fidei* (Oporinus, 1543: B.M., 1227.d.1.).

<sup>5</sup> A. F. Johnson, *Type Designs*, 2nd ed., pp. 109–10.

<sup>6</sup> The earliest occurrence that I have found is in Guillaume de la Perrière, *Theatre de bons engins* (Paris, Denis Janot): reproduction in Harvard, *French 16th Century Books*, ii, No. 337. B.M. catalogues it as [1539?], but Bibl. Nat. firmly as 1539.

<sup>7</sup> By Guillaume II Le Bé in a note on a specimen sent to Jean Moretus: Museum Plantin-Moretus, Arch., vol. 153, following p. 20.

common in Parisian books of the years 1540–55 and it is found at Lyons too; therefore it is remarkable that, having reformed the cursive in a style of his own, he was tempted into cutting two more of the Aldine fashion. This he did, he tells us, on the advice of Jean de Gagny, the king's almoner, a powerful patron of arts and letters and chancellor of the Sorbonne.<sup>1</sup> Gagny himself had similar Italics cut for a private press by a goldsmith at Tours.<sup>2</sup>

Furthermore, Gagny advised Garamond to turn publisher, and Garamond did so in partnership with a bookseller, providing the type.<sup>3</sup> Five books in 16mo format were printed for them partly in Italics of two sizes, Pica and Long Primer, much like the original of Aldus but with inclined capitals. The larger of them had by then been in use by Robert Estienne for two years or more.<sup>4</sup> That was the extent of Garamond's participation in publishing.

Not long after Garamond (as I suppose) cut his first Italic of a new fashion (about 1539) Robert Granjon finished his apprenticeship to a goldsmith and took to cutting punches for type and selling matrices struck with them.<sup>5</sup> During his spell of activity lasting until 1589<sup>6</sup> he cut a range of Italics from Canon (about 48 pt.) to Emerald (6½ pt.) which were from 1550 until 1800 by far the commonest cursive types wherever Latin and the western vernaculars were printed.

Granjon's Italics are fluent: he had a wonderful eye for evenness of inclination achieved by balancing his strokes about a given angle with the vertical. His early essays had a certain *naïveté* in the pleasure that the punchcutter took in varying the slope and curvature of his strokes so as to produce an optical effect of balance. They could not have been cut unless Granjon had admired the cancelleresca corsiva, which he probably knew from the writing manuals.

<sup>1</sup> In his preface to D. Chambellan, *Pia et religiosa meditatio* (Paris, P. Gaultier for C. Garamont, 1545). English translation in *The Fleuron*, iii (1924), pp. 49–51.

<sup>2</sup> J. de Gagny, *Psalmi Davidici in lyricos versus redacti* (Paris, 1547: Bodl. Ps.Lat. 1547 e 1), note on verso of title-page.

<sup>3</sup> P. Beaujon, 'The Garamond Types', *The Fleuron*, v (1926), pp. 131–79, at pp. 137–41.

<sup>4</sup> But with upright capitals, e.g. in Cicero, *Epistolae ad Atticum* (Paris, 1543). Stanley Morison contested the identity (*The Fleuron*, iii, p. 49, note), but I think on insufficient grounds.

<sup>5</sup> *Le Bé Memorandum*, p. 32; H. D. L. Vervliet, 'Robert Granjon à Rome (1578–1589)', *Bulletin de l'Institut historique belge à Rome*, 38 (1967), pp. 117–231.

<sup>6</sup> *Le Bé Memorandum*, p. 47.

One of Granjon's Italics, his 'St. Augustin première',<sup>1</sup> was in use at Paris by 1543 and another, called by Plantin the 'Italicque Garramonde de Granjon première', was cut for Jean de Tournes of Lyons and used by him in 1545.<sup>2</sup> In 1547 he was said to have supplied De Tournes and Gryphius at Lyons with type on the bodies of English and Nonpareil (Fig. 83).<sup>3</sup> 'Nompareille' was presumably Granjon's pet-name for the face; it had not yet acquired a fixed meaning as a measure of body. Granjon's first small Italic, seen in the printing of Gryphius and De Tournes from 1547<sup>4</sup> onwards, is approximately a Brevier.

These three faces show Italic design at an interesting stage of its evolution: they were probably the last to be envisaged as types for texts rather than as auxiliaries to Roman. Their freedom is pleasant; but it contrasts too strongly with Roman regularity to recommend the types for insertion in pages of Roman text. A Pica Italic, which Plantin knew as 'Mediane Italicque première maigre de Granjon',<sup>5</sup> appearing in 1548, is similar. The design has the reduced capitals and close-fitted letters of the Aldine convention, though the capitals are inclined, but ascending and descending strokes are elongated in the later Italian manner. The *g*, the tail of *Q*, and the initial *v* are drawn with verve. Some of the skill as a decorator that is easier to see in Granjon's arabesque ornaments and in his gothic scripts went into the making of his Italics also.

The Italics of Granjon's later style<sup>6</sup> are displayed in Conrad Berner's *Specimen* of 1592. The series of them begins to invade Parisian and Lyonnese printing soon after 1550. It is a long series; to the seven exhibited by Berner five can be added: 'Gros Canon', 'Ascendonica', 'Philosophie', 'Colinaeus', and 'Jolie'. The making extended over many years: the 'Jolie' (Emerald), a masterpiece of cutting in miniature, was not ready until after 1570,<sup>7</sup> and the earliest occurrence of the 'Gros

<sup>1</sup> A. F. Johnson, 'The Italic Types of Robert Granjon', *The Library*, 4th ser. xxi (1940-1), pp. 291-7, at pp. 292-3 (No. 1). The name was used by Guillaume II Le Bé: S. Morison, *L'Inventaire de la fonderie Le Bé*, p. 20.

<sup>2</sup> 'Plantinian Inventories', p. 35; Johnson, 'Italic Types of Robert Granjon', p. 293 (No. 2).

<sup>3</sup> Baudrier, *Bibliographie lyonnaise*, i, pp. 284-5; ii, pp. 51-3.

<sup>4</sup> It is in *Sallust* (Gryphius, title-p. in Constance Meade Coll., Oxford) and *Il Petrarca* (De Tournes, reproduction in Harvard, *French 16th Century Books*, No. 427).

<sup>5</sup> 'Plantinian Inventories', p. 71.

<sup>6</sup> 'Dernière taille de Granjon': Guillaume II Le Bé in *Le Bé Memorandum*, p. 20.

<sup>7</sup> It was used in Remy Belleau's translation of Anacreon (Paris, R. Granjon, 1573) of which earlier editions are reported: *Le Bé Memorandum*, p. 32 and note 47.

Canon' (Canon) known to me is at Geneva in 1575.<sup>1</sup> The 'Ascendonica' (Double Pica) was commissioned in 1570 by Plantin (Frontispiece), who reserved it for his own.<sup>2</sup> The 'Philosophie' (Small Pica) and 'Colinaeus' (Bourgeois) were of the same slightly-inclined and condensed fashion as the *Litera Currens Ciceroniana . . . vulgo Scolasticalis dicta* of Berner's sheet. They were cut for Plantin in 1565.<sup>3</sup>

The effect on Italic types of closer association with Roman shows in the sobriety, width, and rotundity of those cut by François Guyot of Antwerp to which I referred before. The smallest of the three displayed in his specimen was in print by 1548.<sup>4</sup> Judged by the arrangement of his specimens, Guyot designed his Romans and Italics to work together.

The relegation of Italic to a secondary role had been completed by the middle of the sixteenth century. It came about, it would seem, as a result of alternating Roman and Italic for decorative effect. Title-pages provide early examples of the power of this alternation not only to enrich the page but to compel attention. The function of red ink in former days was to a large extent taken over by Italic. French printers took the lead in using the mixture. De Colines<sup>5</sup> and Christian Wechel<sup>6</sup> did so in title-pages of 1531, and Wechel, certainly, practised with Roman and Italic the ornamental shaping of displayed matter that had been customary in printing with Black Letter. If the examples from Paris are the first, those from Lyons are the best: Trechsel, Moderne, La Porte, Huguétan showed the way for Jean de Tournes, the supreme master of marshalling lines of print for decorative ends. The splendid French title-pages of the second half of the sixteenth century depend a good deal on the interplay of the rhythms of Roman and Italic. At Basle, Brylinger was not far behind the French in achieving such effects.

Conventions as to the proper sphere of Italic had not hardened by the end of the century. Guillaume Morr   of Paris is found using Italic for headings in 1532;<sup>7</sup> by 1546 chapter-summaries were italicized

<sup>1</sup> In *Glossaria duo*, ed. Henri Estienne. The inventory of Le B   II, made about 1620, includes an 'Italique Gros Canon Granjon': Morison, *L'Inventaire de la fonderie Le B  *, p. 18.

<sup>2</sup> 'Plantinian Inventories', p. 37 (ST 25).

<sup>3</sup> *Ibid.*, p. 26 (ST 27, 28).

<sup>4</sup> *Type Specimen Facsimiles 1-15*, ed. J. Dreyfus, No. 1, note on p. 2.

<sup>5</sup> Silius Italicus, *De bello punico*: B.M. 237.a.14.

<sup>6</sup> Valeriano Bolzani, *De sacerdotum barbis*: B.M. 683.d.29(5).

<sup>7</sup> Harvard, *French 16th Century Books*, No. 225.

as in the French *Hypnerotomachie*.<sup>1</sup> The use of Italic for Latin in a vernacular text had begun by 1549, as one may see in the second edition of Tory's *Champ fleury*. There was always a disposition to set poetry in Italic, and Froben was an early exponent of its suitability for prefaces.

After 1600 no punchcutter offered a Roman face without a companion Italic. A need to mate the pairs of founts was first recognized, as I believe and have said, by François Guyot of Antwerp in the 1540s. His example was followed in the same city by Ameet Tavernier, who was active from 1550 until 1570.<sup>2</sup> He left to posterity a useful range of Romans in the manner of Garamond and of Italics modelled on Granjon's. And yet there was a tendency to specialize, as Garamond and Granjon did (not wholly), in one script or the other. Hendrik van den Keere of Ghent, a prolific artist during the years 1565–80 in Black Letter and Roman, never cut an Italic.

<sup>1</sup> Francesco Colonna, *Hypnerotomachie*, ed. J. Martin (Paris, 1546); B.M. 635.m.17.

<sup>2</sup> H. D. L. Vervliet, 'Typographica Plantiniana, iii: Ameet Tavernier, Punchcutter (ca. 1522–1570)', *De gulden passer*, 39 (Antwerp, 1961), pp. 19–76.



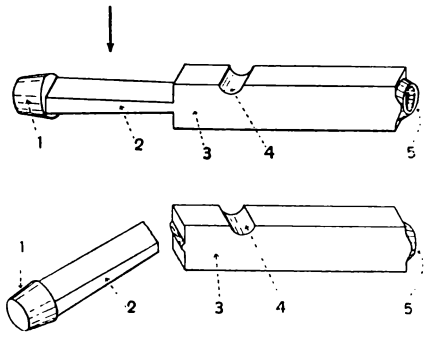


FIG. 2.—Isometric view of type as usually cast before and after breaking off the tang.

- 1. The dot.
- 2. The tang.
- 3. The body.
- 4. The nick.
- 5. The face.

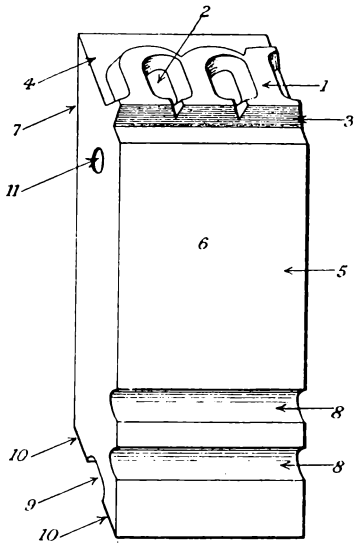


FIG. 3.—Isometric view of type. (2½ times full size.)

- 1. The face.
- 2. The counter.
- 3. The neck (or beard).
- 4. The shoulder.
- 5. The stem or shank.
- 6. The front.
- 7. The back.
- 8. The nicks.
- 9. The heel-nick or groove.
- 10. The feet.
- 11. The pin-mark or drag.

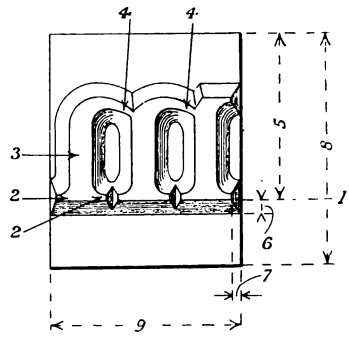


FIG. 4.—Plan of type. (2½ times full size.)

- 1. The line.
  - 2. Serifs.
  - 3. Main-stroke.
  - 4. Hair-line.
  - 5. Line-to-back.
  - 6. Beard.
  - 7. Side-wall.
  - 8. Body.
  - 9. Set.
- The body-wise dimension of the face is called the gauge.

FIG. 1. An engineer's diagram to illustrate the technical terms used of type. The standard height of British and American type is 0.917 in. Reproduced from L. A. Legros and J. C. Grant, *Typographical Printing Surfaces* (1916). Reduced.

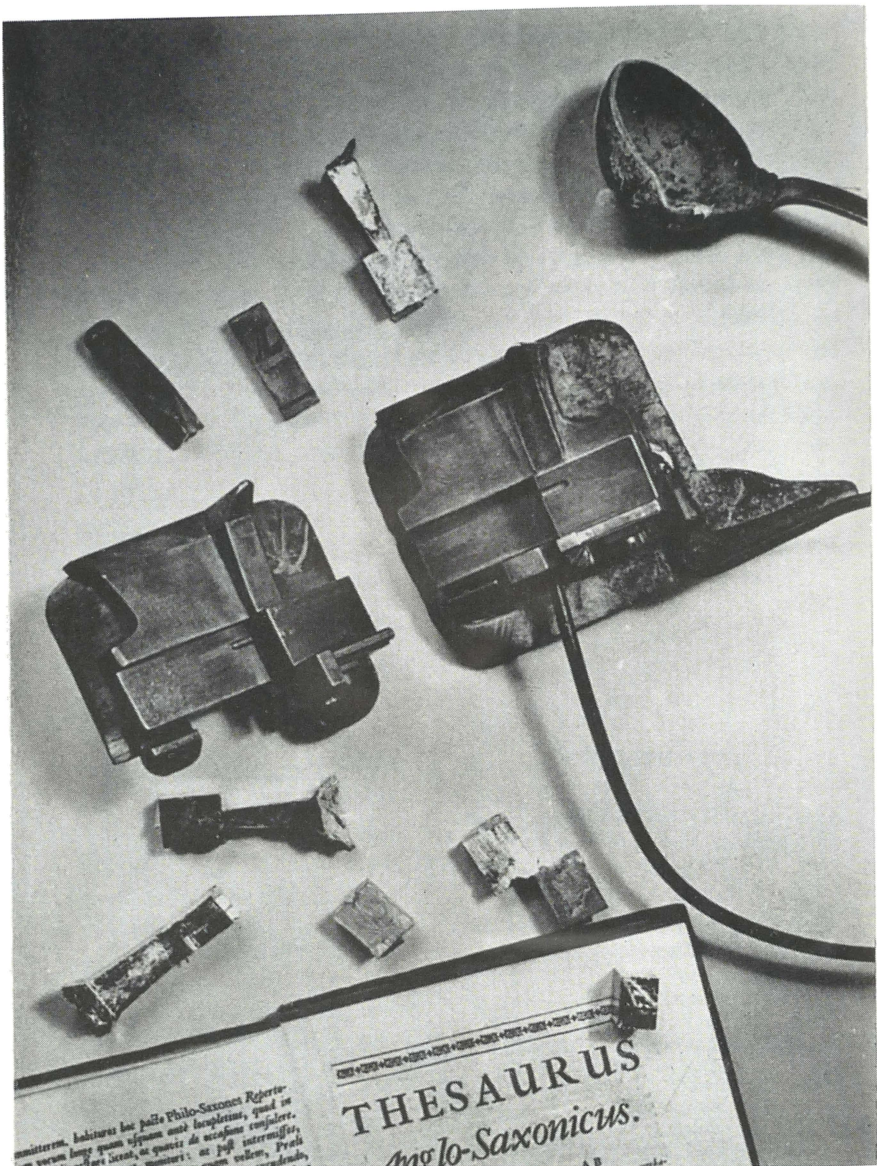


FIG. 2. An English typesetter's mould of about 1850 and pieces of type cast in it. University Press, Oxford. Photograph by J. W. Thomas. The mould measures about  $2\frac{1}{2}$  in. square

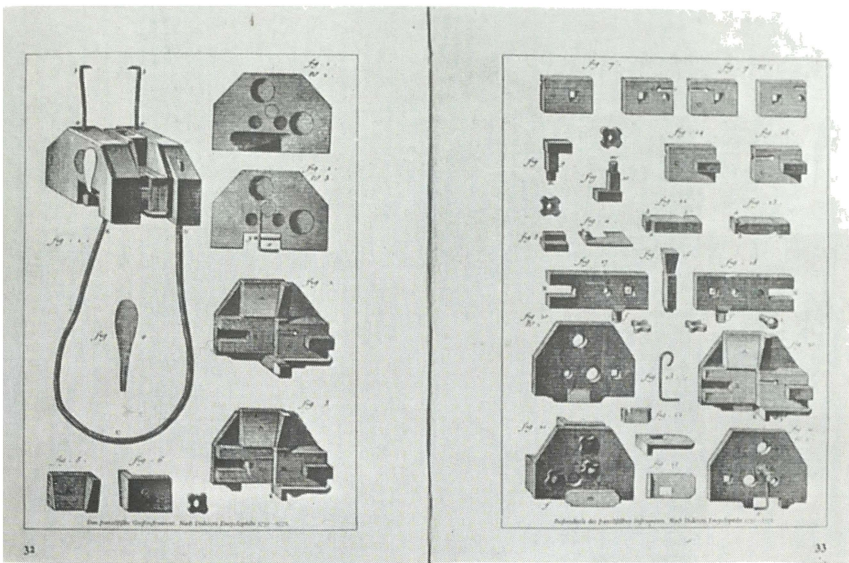


FIG. 3. Plates in the *Encyclopédie* of Diderot and d'Alembert (1751-72) showing the typefounder's mould and its parts. Reduced.



FIG. 4. Matrices for the Pica Roman face bought by Bishop Fell in 1672. Photograph by J. W. Thomas.

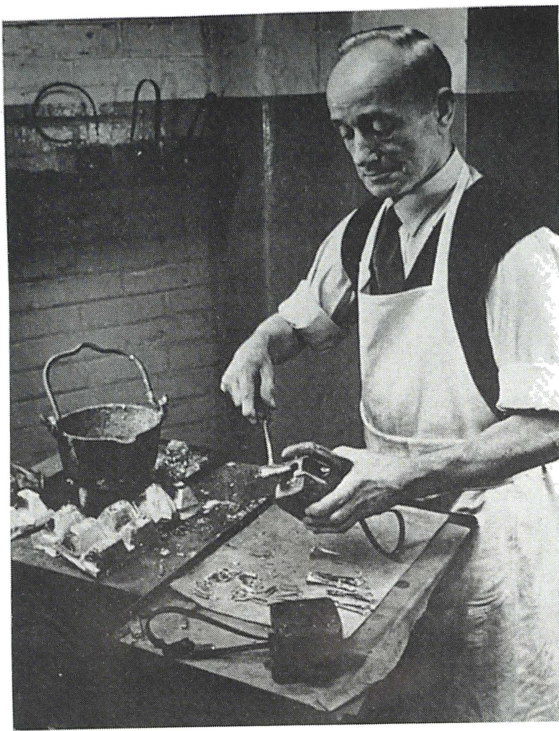


FIG. 5. Casting type in a hand mould.



FIG. 6. Sixteenth-century matrices for the Canon Roman of François Guyot. The one in the top right-hand corner of the photograph has not been justified. Museum Plantin-Moretus (MA 131b).

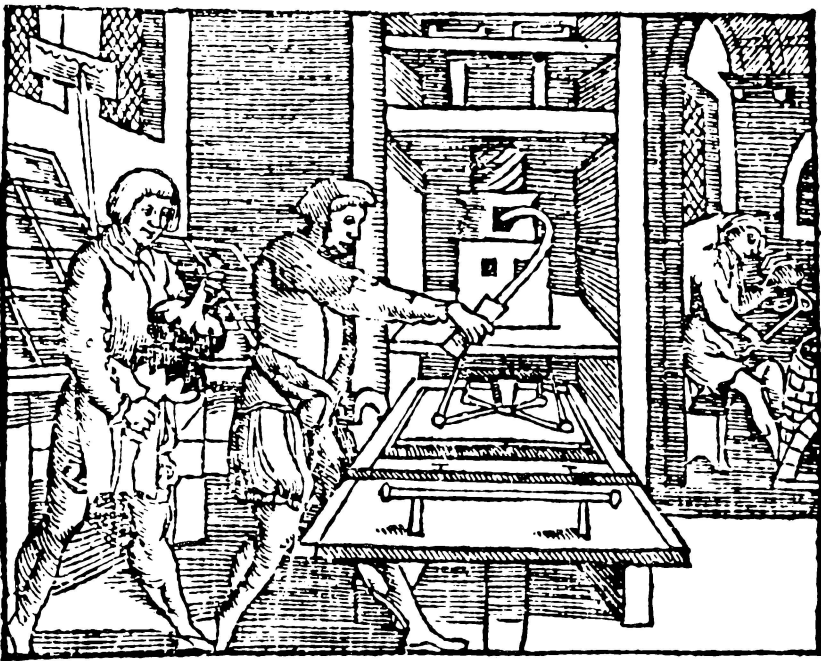


FIG. 7. 'Admonition to the skilled tradesman', a woodcut in Cornelis van der Heyden, *Corte instructie vnde onderwys* (Ghent, J. Lambrecht, 1545). British Museum, 843. c. 17 (6). A caster is to be seen in the background.



FIG. 8. Matrices for 5-line Pica Roman capitals of the 16th century belonging to Joh. Enschedé en Zonen of Haarlem. Lead matrices in the top two rows are believed to have been struck with the brass letters, some of which are shown fitted into them. One of the brass letters is lying on the bottom right-hand corner of the box.

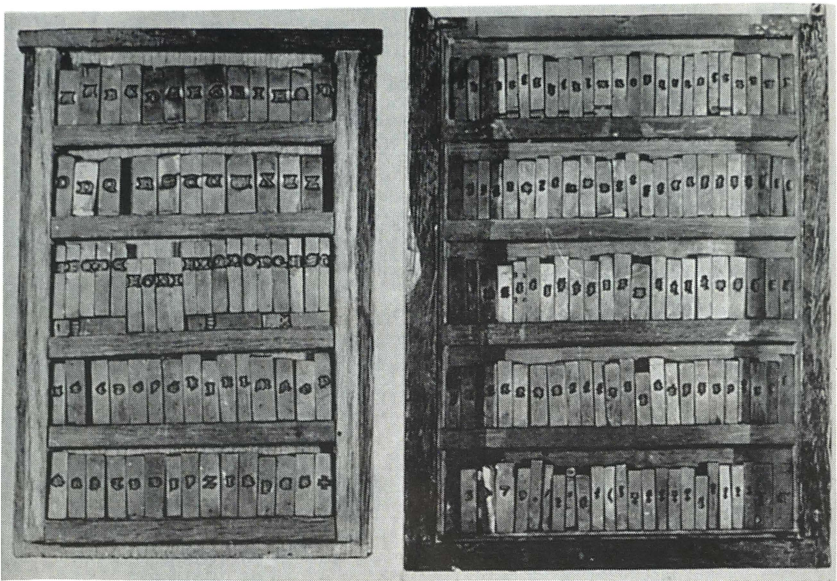


FIG. 9. Matrices for the English-bodied Black Letter and Lombardic initials cut by Henric de Letter-snijder about 1490. Joh. Enschedé en Zonen.

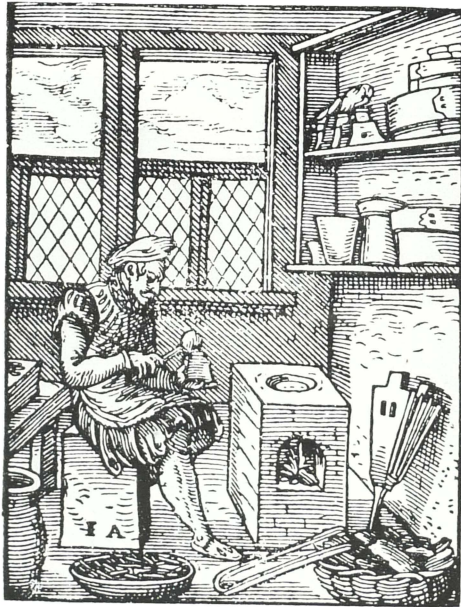


FIG. 10. 'The Typefounder', a woodcut by Jost Amman in Hans Sachs, *Eygentliche Beschreibung aller Stände und Handwerker*, (Frankfurt am Main, 1568.) British Museum, C. 57. b. 25.

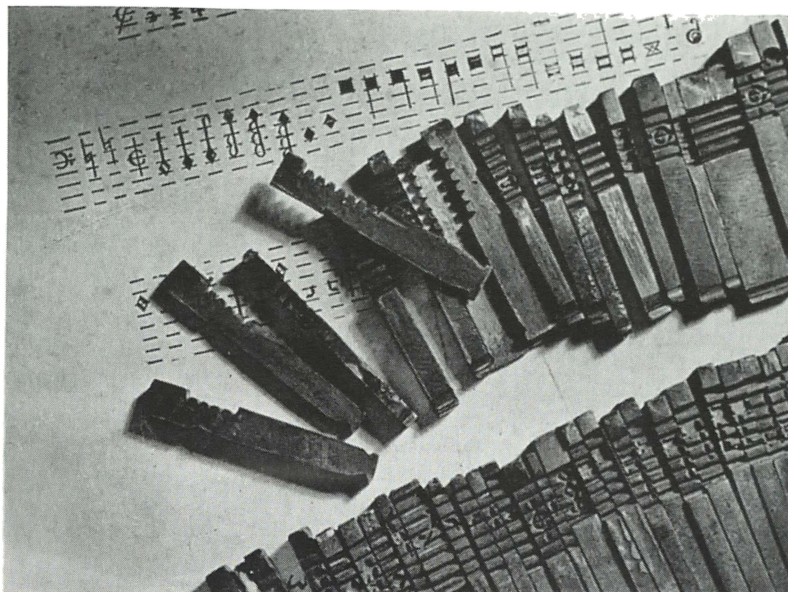


FIG. 11. Matrices for a music type bought by Bishop Fell in 1672. University Press, Oxford. Photograph by J. W. Thomas.

ǫ̇̃  
 ǫ̇̃  
 BBB DDD FFFF KKK MMM NN  
 NOOSS VVV XXX YYY Z Z  
 PPP í ì ï è è d S d q q q q q q q q k k k k k ì d ° ° °  
 k p p p q q q q l l l l l l l l l l l p p p p p p p p p p p p p p p p p p  
 d p p p p p p p q  
 v u g u g u g u g u y y y y y y y z z z z z z z f f f f f f f f f f f f f f f f  
 f  
 m m m m n n e e e i i o o o a a a e e e e e e e o o o o u u u a a a e e e e e e i

FIG. 12. Impressions from type cast in the 18th century in old matrices without sides. The top two lines show the result of casting a single piece of type in three matrices put side-by-side in the mould. From Johannes Enschedé, *Proeven van letteren* (Haarlem, 1768).

Epist. Augustini de Civitate Dei, C. 19. in Ambrosij. Roma de  
 Valerij, et Nicolai Trivulij. In Officij Ordinis Praedicatorum  
 1290. in per. Rubr. 2. in fine. 1773. Fol.

traditio assignat. Si inquam hoc  
 sequuntur super epythetis regulum con  
 nobis et omnibus qui hoc studium con  
 dot dominus sine quam suscipimus con  
 dia macta, confirmatio expectant. In  
 verum est tam conuocant. et inuenit inter eos  
 qui resurgunt in vitam eternam. Inter  
 quos a consuetudine et obprobrio libentem  
 per casum dominum nostrum per quem  
 deo patre omnipotenti est factus sancto  
 gloria et imperium in saecula saeculorum  
 amen.

Explicit epistolio sancti Iohannis in  
 simbo apotheorum ad papam laur  
 eum. Impressis Opone Et finita An  
 no domini. M. cccc. lxxvij. pp. 108.

Videtur Noua in Historica Graecia Laurin  
 Gulielmi de Saona impressa in Vila  
 de Albani. Anno. 1780. 4. g. 96. copula  
 quam Joh. Arnoldus de Galatona  
 phia Gudenhorst et Ger. Malinca  
 de Cetero, et progrepu typographia.  
 4. H. 3. bit. Agimera de Templo pp. 240  
 At. de. optimorum Saeculi. 17. in. pp. 108. et  
 Ca. Joh. Gudenhorst. Anno. 1784.

septimo pacifici non sui sed pro ambitione tenet  
 eorum a bonorum discordias seminau ac saluata se  
 a. Oportet quod non apert propter iniquitatem et ma  
 ledictionem ipsam sustinuit sicut peccati me videtur  
 quantum bonum et qualiter me ego inquit peccator  
 peccatum contra Oportet tenentem scirent uti si  
 dicitur a singulari et eorum certitudinem scirent uti si  
 noverunt dominum il. vigilando rodo me deo cui  
 pabilis et dico meam culpam a deo meo inbil  
 gion a a vobis patre absolutione a penitentiam  
 Is sepe peccata mortalia committit in sepe la  
 scilicet i. falsitas. Et sit ista i. supbia. Avaritia.  
 luxuria. Inuidia. Gula. Ira. Acrobia  
 Is qui quae sunt sensus spirituales Et sit tales  
 videtur. Quis Obortatus Audient Gustus et  
 Laetus Is de et peccata vni patet per hoc quod  
 Quam exade deum nec inuocant vana per ipsum  
 sabba sanctas habent in honore parentum  
 Non sic deos sine meritis suis iniquis  
 Illorum nuptia nec in capitis alium. Et de his  
 duo quatuor peccata dico meam culpam a. no  
 ter deo a vobis a peccato a deo meo unum a. a  
 bis per absolutionem a penitentiam. Ideo potest tractari  
 ma. viginti manuum ossa ac facta dei et uos pres  
 eorum. 2. me ad vitam huius tribum ut peccata michi  
 oia peccata mea mortalia criminata et venialia  
 obliuiscere et neglecta ac per me. confessa a que libenter  
 confitear si eorum memoriam habent a in opere quo in  
 epi peccatae sit ad plentem dei. significari. Depr a

M. deus confitentis, Tom. 2. cap. 1. 1478





FIG. 14. Models for Hebrew letters cut in wood by Guillaume Le Bé in 1573. Paris, Bibl. Nat. Ms. Nouv. acq. fr. 4528, fol. 14<sup>v</sup>. Reduced by one-fifth.

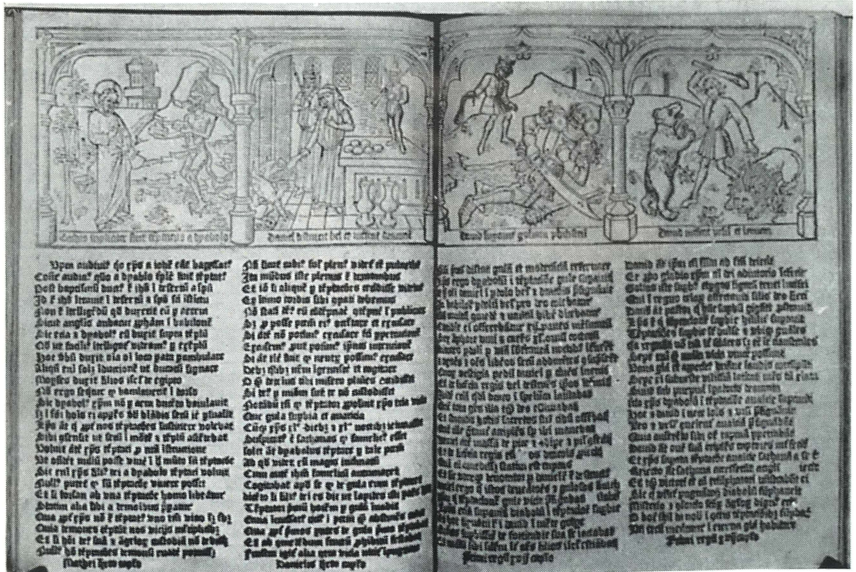


FIG. 15. *Speculum humanae salvationis* (Utrecht?, c. 1470?). Bodleian Library, Douce 205. Reduced. The depth of the printed area is 8 in. The left-hand page is type-set.

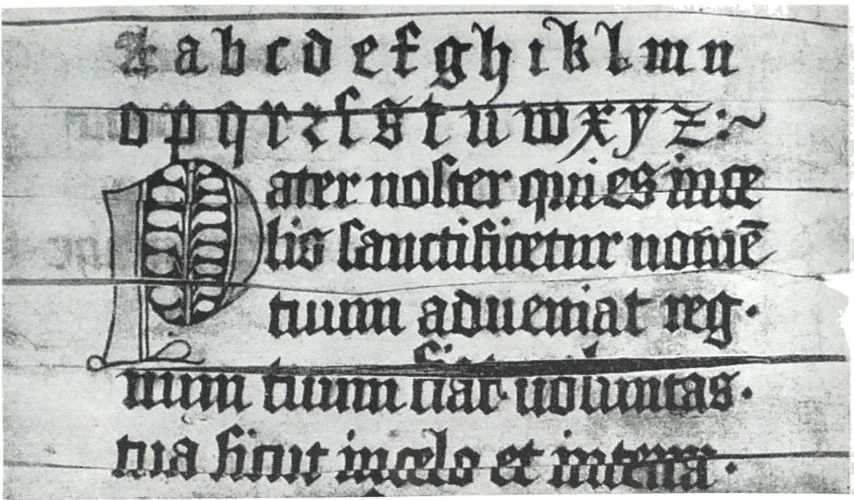


FIG. 16. Part of a woodcut *Abecedarium* of the 15th century. Reproduced from the *Gutenberg Jahrbuch* 1928, Tafel 9. (The original is mislaid.)

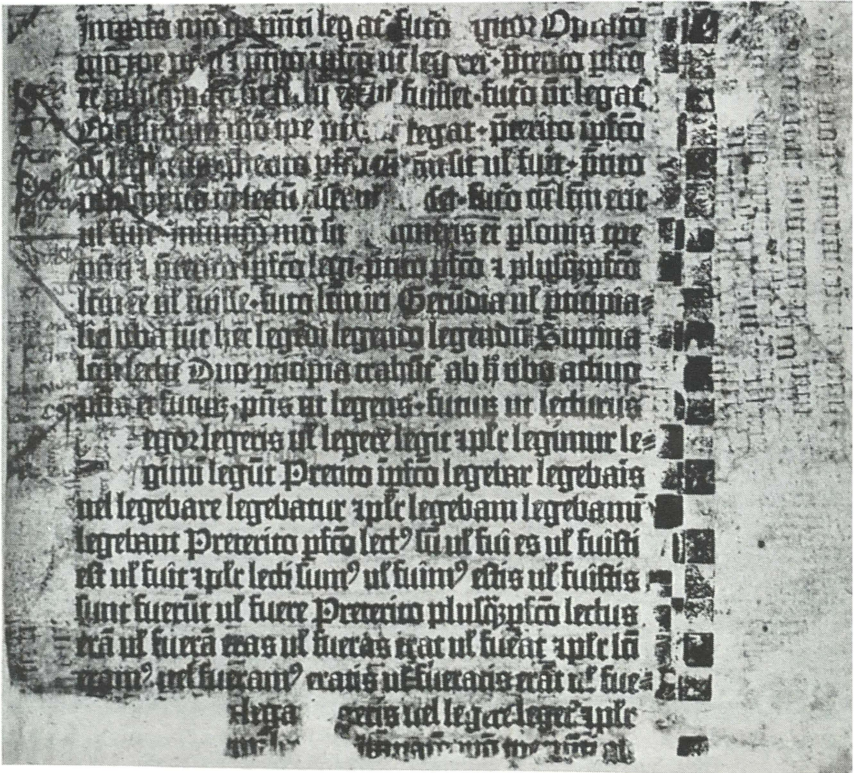


FIG. 17. A proof of a page of Donatus, *Ars minor* (sheet iva), printed at Mainz, probably about 1455-60. Cracow, University Library. Reduced. Printed area  $7 \times 5\frac{1}{4}$  in.

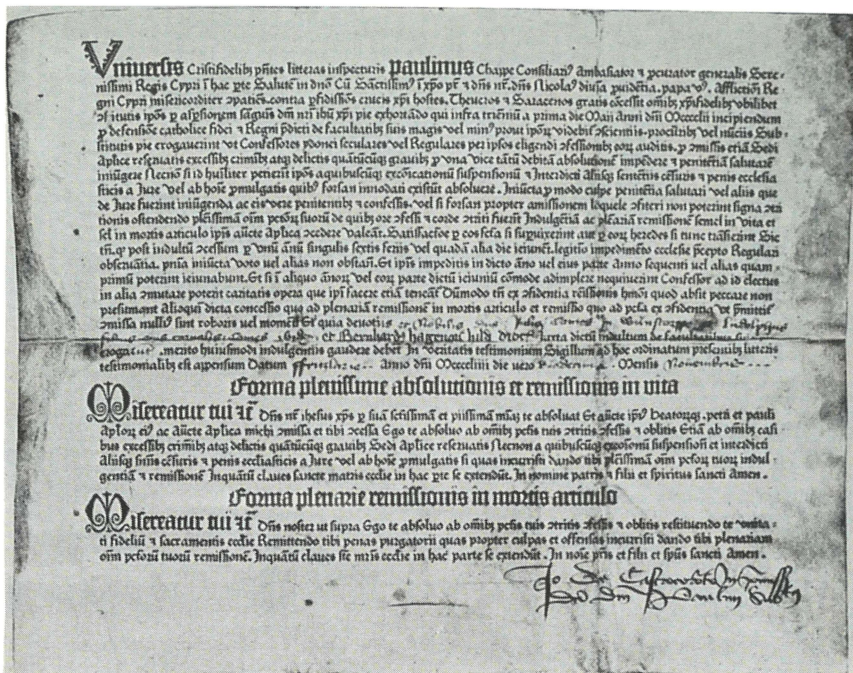


FIG. 18. The 31-line Indulgence, 1st ed., 1454–5. Hanover copy. Reproduced from *Veröffentlichung-der Gutenberg-Gesellschaft*, II (Mainz, 1903), Tafel 1. Reduced. Printed area  $6\frac{1}{2} \times 8\frac{3}{8}$  in.

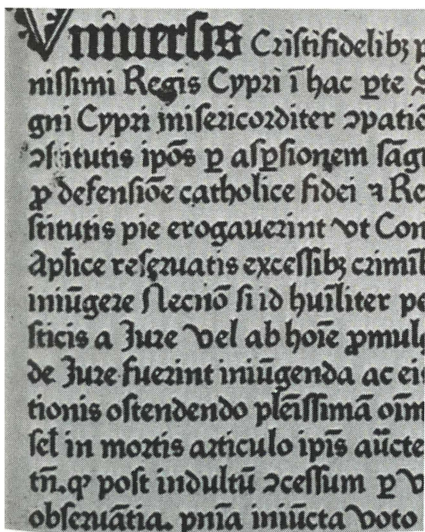


FIG. 19. Part of the 31-line Indulgence in the original size.

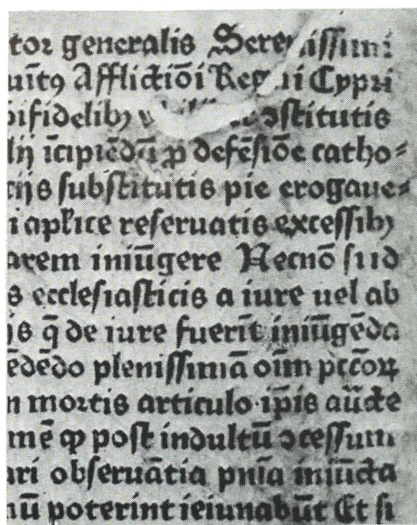


FIG. 20. Part of the 30-line Indulgence of 1454–5 in the original size. British Museum.

**Q**uid loquar de l  
 ai ap[osto]lus paulus  
 et magister gentium. qui  
 t[ame]n i[n] se hospitiis loquitur  
 experimentu[m] queritis  
 loquitur x[rist]o. Post dem  
 lustrata: ascendit iheros[olym]  
 petru[m] et mansit apud eu[m]  
 Hoc eni[m] multo ebdon  
 adis: futur[us] gentiu[m] p[ro]  
 dus erat. Rursu[m]q[ue] po  
 decim assumpto bartu[m]

FIG. 21. Type of the 42-line Bible (Mainz, before Aug. 1456). Bodl. Auct. M I 2.

extra urbem querent. Ap[osto]lo  
 gus ut vulgus loquitur. hinc p[er]  
 a tradunt. inu[en]it plas. p[er]n  
 nos. scythas. massagetas. op  
 regna penetravit. et ad extrem  
 ampne t[ra]nsmisso puenit ad b  
 arcam in throno sedentem aureo  
 potantem. iter paucos discipulo  
 ribus ac de cursu diem et sider  
 Inde pelamitas. babilonios  
 assyrios. parthos. syros. ph  
 lestinos. reuisus ad alexandri  
 piam. ut gignosophistas et fa  
 mensam videret i[n] sabulo. In

FIG. 22. Type of Mentelin's first Latin Bible (Strasbourg, not after 1461). Bodl. Auct. M III 6.

**N**ec hoc dico. q[uo]d sit ali  
 me t[ame]n. q[uo]d vel possis  
 velis discere: sed quo ardore  
 studiū. etiam absq[ue] nobis p[ro]  
 at. Ingenu[m] docile. et sine d  
 le est. Non quid inuenias:  
 consideramus. Nullis cera  
 facilis: etiam si artificis et pl  
 nus: tamen virtute totu[m] est qu  
 Paulus ap[osto]lus ad pedes g  
 moyse et p[ro]phetas didicisse l  
 manus sp[irit]u[m] lib[er]is. poste  
 Arma enim nostre milicie n[on]  
 sed potentia deo. ad destruc  
 num et cogitationes destrue

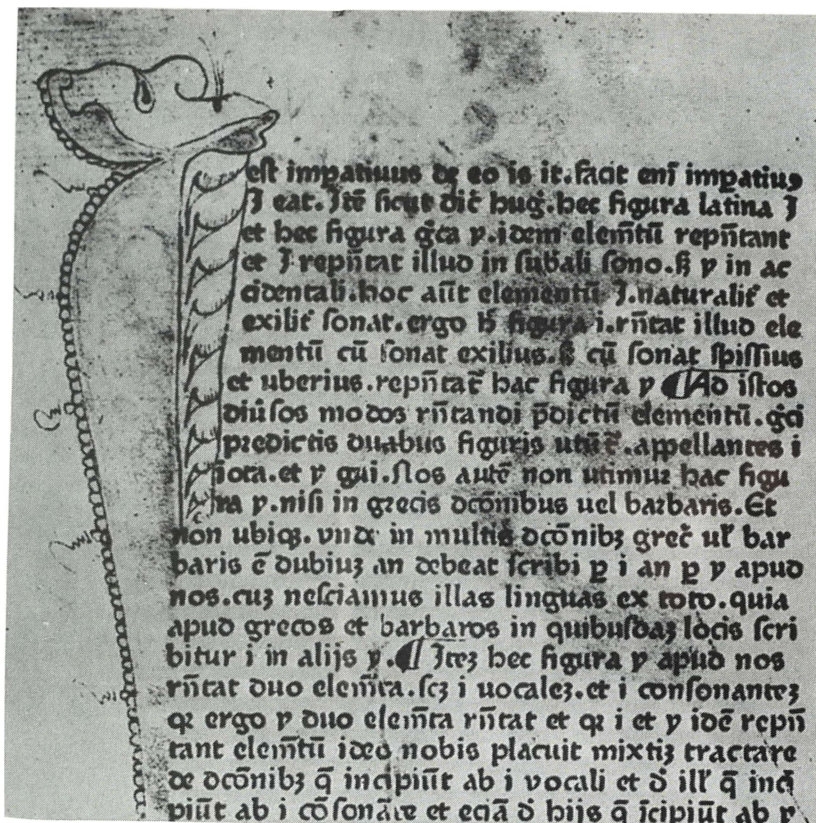
FIG. 23. Type of Fust and Schöffer's first Latin Bible (Mainz, 1462). Bodl. Auct. M I 4.

Roma non traxerat: vni[us]q[ue] h[ab]e  
 duxit. Habuit illa etas inau  
 culis: celebrandumq[ue] miracu  
 tantam ingressi: aliud extra v  
 Appolonius siue ille magus  
 tur: siue philosophus. ut Pit  
 itrauit perfas: pertransiuit c  
 scythas: massagetas. opulenti  
 na penetravit. & ad extremu[m]  
 som ampne t[ra]nsmisso puenit  
 ut hiarcam in throno sedentem  
 tali fonte potantem: inter p[ro]  
 de natura: de moribus ac de  
 diret docentem. Inde p[er] Elam  
 Chaldeos. Medos. Assyrios.  
 Phenices. Arabes. Palestin  
 Alexandriam: prexit ad Etl

FIG. 24. Type of the R-Printer's Bible (Strasbourg, about 1469). Bodl. Auct. M I 12.

**S**ancte Iuca, or  
**S**c̄e Barnaba, or  
**O**m̄es sancti apli  
et euāgeliste orate.  
**S**c̄e Stephane or  
**S**c̄e Laurenti, or  
**S**c̄e Vincēti, or  
**S**ancte Iine, or  
**S**ācte Clete, or  
**S**c̄e Cleuēs, or  
**S**c̄e Georgi, or  
**S**c̄e Sixte, or

FIG. 25. A page of the *Canon Missae* (Mainz, 1458). Bodl. Douce 280\*. The same types were used in the Mainz *Psalterium* of 1457.



## VIRGINUM.

- γ. Elēgit eam Deus, & praelēgit eam.  
 β. In tabernaculo suo habitare facit eam.

AD NONAM,

Anaphona. Ista est speciosa.

Resp. breve.

Elēgit eam Deus, \* Et prae-  
 elēgit eam. Elēgit V. In taberná-  
 culo su o habitare facit e am. Et  
 prae elēgit. Glōria a Patri, & Fi-  
 li o, & Spiri tu i sancto. Elēgit.

- γ. Diffusa est gratia in labiis tuis.  
 β. Propterea benedixit te Deus in aeternum.

AD VESPERAS, Anaphonae, Psalmi, & Hymnus ut in primis  
 Vespens. pag. CLXXII.

- γ. Diffusa est gratia in labiis tuis.  
 β. Propterea benedixit te Deus in aeternum.

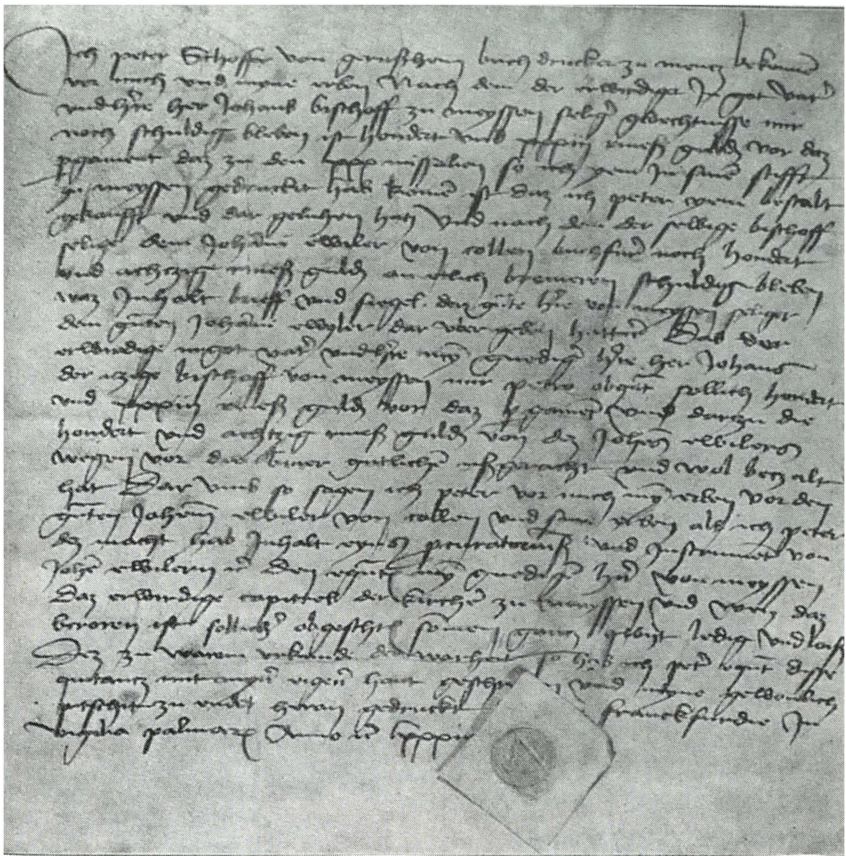


FIG. 28. Receipt by Peter Schöffer to the Bishop of Meissen, 14 April 1489. Reproduced from *Veröffentlichungen der Gutenberg-Gesellschaft*, v-vii, Tafel xiv. Reduced.

FAUST

**H**ABE nun, ach! Philosophie,  
 Juristerei und Medizin,  
 Und leider auch Theologie!  
 Durchaus studiert, mit heissem Bemühn.  
 Da steh' ich nun, ich armer Tor!  
 Und bin so klug als wie zuvor;  
 Heisse Magister, heisse Doktor gar,  
 Und ziehe schon an die zehen Jahr',

FIG. 29. Type of Goethe's *Faust* (Munich, Bremer Presse, 1923).

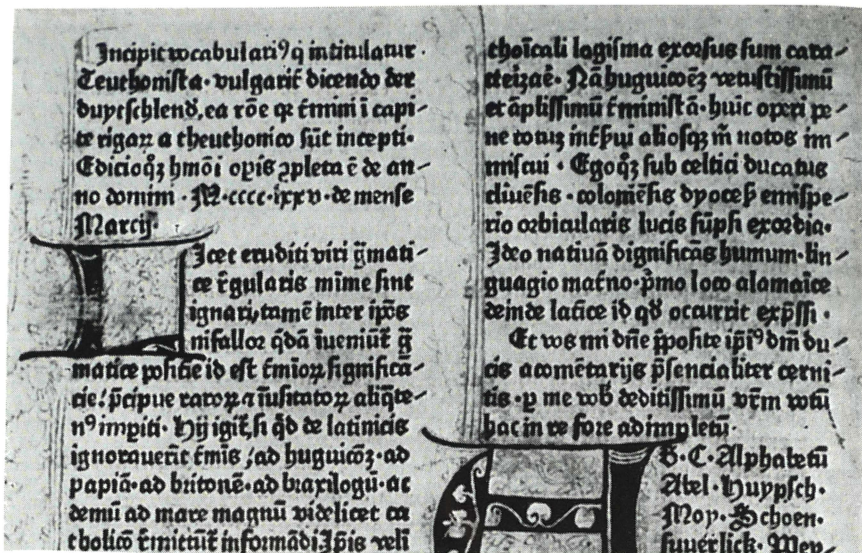


FIG. 30. Arnold Ther Hoernen's type in Gerardus de Schiuren, *Vocabularius teutsch* (Cologne, 1477). Bodl. MS. Junius 21.

ti. Actus autem alter p̄fecti & im p̄fecti. Si autem sensus sup̄le nō patitur p̄prie nec moueretur multo minus nec intellectus. Quere ret aliquis in quo differt sentire a motu p̄hysico. Dicendū est q̄ triplicem differenciā possumus dace inter sentire et motū p̄hysicū. In sensu em̄ videmus q̄ sensibile agit re ducendo sensum de p̄tenciā ad actū sic aut̄ sensibile agit in sensum q̄ nichil patitur a sensu. ex quo patet prima differenciā inter sentire & motum p̄hysicū. quia in moneri p̄hysico agens repatitur. In sentia re autem sensibile agens non repatitur a sensu. Et h̄c differenciā p̄ test̄ haberi ex textu s̄m̄ v̄num mos

FIG. 31. Second type of the first press at Oxford. A page of Alexander de Hales, *Expositio super libros Aristotelis de anima* (Oxford, 1481). University Press, Oxford.

ad virtutum op̄a aggredien da quib̄? facilitatem actuum virtuosoz ostendendam duxi maxime propter tria

Primo p̄t̄ causā origiālem.  
Sec̄do p̄t̄ adiutoriū d̄male.  
Terzio p̄t̄ p̄mū eternale.

Q̄ facile ē v̄nicuiq̄ op̄ai bonū p̄t̄ causā origiālem que est hominis v̄lutas libera que nō cogitur. Capitulu p̄mū.

Primo oñdo facile esse v̄nicuiq̄ op̄ari bonū p̄t̄ causā origiālem Na si recte cōsidem̄? v̄nde ē q̄ aliqui boni aliq̄ mali sint non nulli recte nōnulli v̄ro p̄ncipio f̄lissime v̄niāt̄ in v̄e em̄? p̄fecto

FIG. 32. Ulrich Zell's type in Robertus Caracciolus, *Sermones quadragesimales* (Cologne, 1473). Bodl. Auct. 1 Q IV 34.





FIG. 33. One of the drawings by Felice Feliciano (about 1463) for the Roman capital alphabet. Vatican Library, Cod. Vat. lat. 6852.

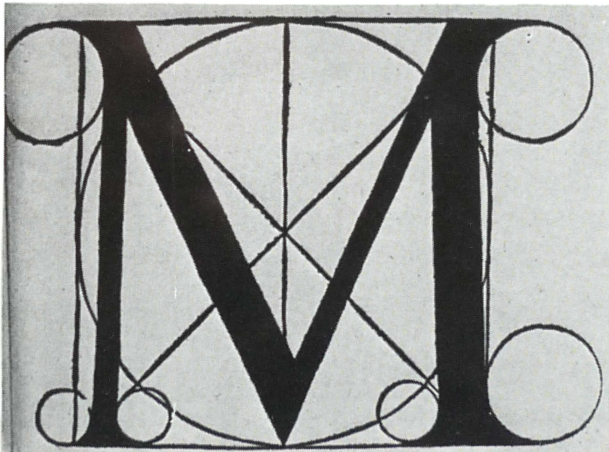


FIG. 34. From Lucas Pacioli, *Divina proportione* (Venice, 1509). Bodl. AA 69 Art. The diagrams, by an unknown hand, form an appendix to the book. Reduced.

scienciam q̄ non negligat scripturarū: obtinē  
 tem: inquit eū qui secundum doctrinā est f̄  
 delē sermonē: v̄t potens sit exhōtari ī doctri  
 na sana & cōtradicentes reuincere. Ca<sup>m</sup> m  
**S**ancta quippe rusticitas solum si  
 bi p̄dest. & quātū edificat ex vite  
 merito ecclesiā cristi: tantū nocet si  
 destruētib; non resistat. Malachias p̄p̄beta  
 īmo p̄ Malachiam d̄ns interrogauit sac̄dotes

FIG. 35. The R-Printer's type. From *Biblia* (Strasburg, about 1469). Bodl. Auct. M I 12.

Capitulū .xiii. ¶ Hoc in loco. ¶ Folio .xvi.  
 Quod deos uanos et deū uerū nemo simul pōt colere  
 At enim dicit aliquis. ¶ Folio .xvii.  
 De p̄pria rōanoꝝ religioe. ¶ Ca. xx. ¶ Veio nūc  
 De sacrificiis & misteriiis eoz. ¶ Ca. xxi. ¶ Diximus  
 Quis auctor predictarū uanitatū ī italia apud roma

FIG. 36. The type of Lactantius, *Opera* (Subiaco, Sweynheym and Pannartz, 1468). Bodl. Auct. L III 33.

munio. cognitum per te ipsum quæ tua  
 dignum: tua amicitia atq; hospitio iudic  
 igitur a te ut his literis lectis: recipias eui  
 fidem. Polliceare omnia te facturum n  
 De reliquo si id quod confido fore dign  
 amicitia: hospitioq; cognoueris. Peto u  
 tēplare diligas in tuis habeas. Erit id m  
 in modum gratum. M. C. Alieno p̄p̄beta

FIG. 37. The type of Cicero, *Epistolae ad familiares* (Rome, Sweynheym and Pannartz, 1469). Bodl. Auct. I Z 4.

tes ad defendendū naues. Nā vasis illis  
 cōfractis in huiusmodi locis. loca illa p  
 sapore liquitum reddunt adeo lubrica. q̄  
 hostes ibi ponētes pedes statim labunt pe  
 des in aquas. Est aut̄ & decia cautela q̄  
 p̄mptuosior oībus. Nā requirunt̄ aliqui  
 marinarii. qui diu sub aquis durare pos  
 sint. Naute ergo debēt serio ordine cōtra  
 nauē hostiū & clā post tergū aliq̄ emit  
 tere diu valentem durare sub aquis. Qui  
 accepto penetrati sub aquis debēt ascēdē  
 ad hostilē nauē. & p̄forare infundo. faci/

FIG. 38. The type of Colonna Romano, *De regimine principum* (Augsburg, Günther Zainer, 1473). Bodl. Auct. 1 Q I 14.

¶ Virtus fidei est necessaria. par. j. ca. iij.  
 ¶ Virtute certius cognoscitur q̄ arte. par. ca. i  
 ¶ Virtutes naturales que sint. par. j. ca. iij.  
 ¶ Virtutum naturalium sunt tres species. par. v.  
 ¶ Virtutes consuetudinales que sint ibidem.  
 ¶ Virtutes theoloice que sint ibidem.  
 ¶ Virtutes naturales consuetudinales et theolo  
 differunt. ibidem.  
 ¶ Virtutes naturales sunt fundamentum et gra  
 mentum perfectionis. ibidem.  
 ¶ Virtutes naturales in adam et in nobis qual  
 v. ca. iij.  
 ¶ Virtutes naturales proficiunt exercicio. ibide  
 ¶ Vitulus quomodo offerebatur i veterē lege  
 par. vi. ca. v.  
 ¶ Vitula qualiter et quare offerebatur. par. vi.

FIG. 39. The type of Gregorius I (Pope), *Registrum in librum epistolarum* (Augsburg, Günther Zainer, n.d., about 1475-6). Bodl. Auct. 7 Q infra I 5.

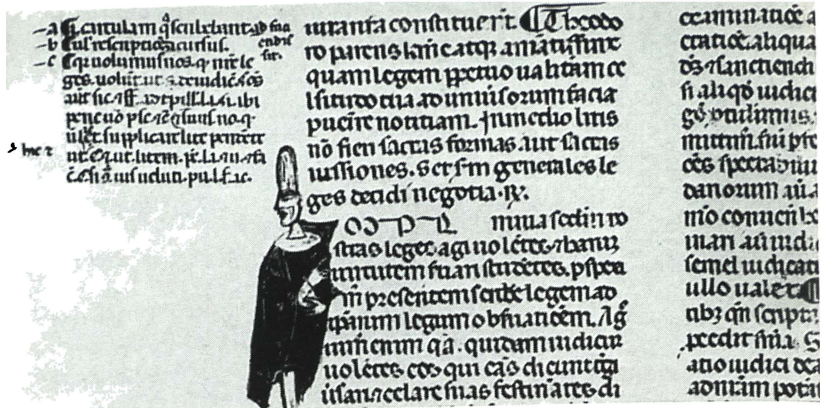


FIG. 40. The Bolognese book hand. A leaf of unknown date in the Constance Meade Collection, Oxford. Reduced.

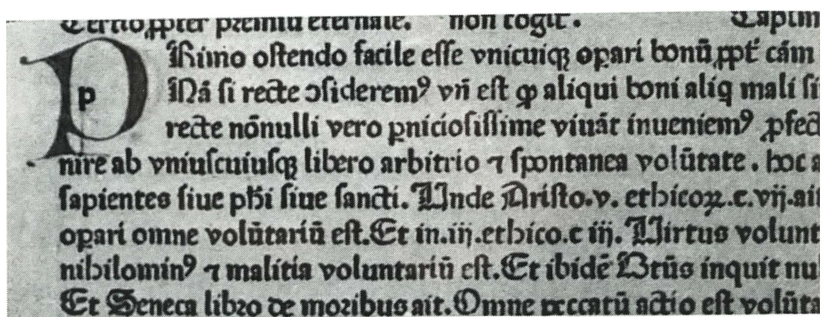


FIG. 41. The gothic type of Wendelin de Spira in Robertus Caracciolus, *Sermones quadragesimale* (Venice, 1472). Bodl. Auct. 6 Q IV 35.

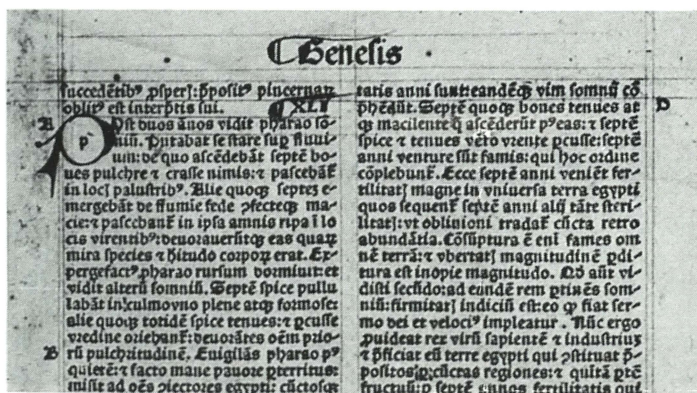


FIG. 42. The Nonpareil Italian rotunda type of Froben's 8vo. Vulgate (Basle, 1491). Bodl. Auct. M infra I 13.

Das drit capittel sagt von erfuchung neidischer sachen vnn  
 ist von endung/der sich strewet eines andern vngelucks.  
 Wer ein ding hasset/des gemüt hat auch erschreckē oder scheu-  
 hung darab In dem büchstaben a  
 Wer fürgibt das nit ist/der leydet billich/ Nach der dritten  
 figur In dem büchstaben f  
 Schweigē in seinen aignen sachen ist gebellen/vñ wer schwei-  
 get der besterigt/ Nach der dritten figur In dem büchstaben f.

FIG. 43. German vernacular gothic type in *Buch der Weisheit* (Ulm, L. Holle, 1484). British Museum, G. 7811. Reduced by one-fifth.

lichen tag. Warum sagstu es mit  
 nit. Vnd ammon sprach zū im Ich  
 hab lieb thamar die Schwester abso/  
 lons meins brüders. Jonadab ant-  
 wurt im. Xū auff dem bet vnd er  
 zeyge dich. als seyest du krank. vnd so  
 dem vatter kumbt. vnd dich heym  
 sucht. Sprich zū im. Ich bitte meyn  
 Schwester thamar kum. dz sy mir geb  
 das essen. vnd mach ein gemüse. Das  
 ich esse von irer hand. Darumb am-  
 mon lag. als sieng er an zusehen.

erleyden mein schand od  
 du wirst als einer vonn-  
 sen in israhel. Aber rede zū  
 zū dem künig. vnd er v-  
 dir nit. Aber ammon we-  
 gen irē gebettē. Sunder  
 sie mit krefftē. vnd verē  
 schließ bei ir. Vnd am-  
 sye mit gar grossen has  
 der has was merer. mit  
 fet. den die lieb. mit der er  
 liebgehabt. Vnd ammo

FIG. 44. Schwabacher (Upper Rhenish) type in the Bible in German (Strasburg, J. Grüninger, 1485). British Museum, IB 1734.



Ancte et salubris profectionis atq; pegrin-  
 marine Iherosolimitane. laudes amplissin  
 dignitate. et pclaras vilitates cupiens hac  
 cia extollere oratione. ita paucis vtendū cen-  
 tē gerā lectori. vt habeā nichilominus ratio-  
 quo orthodo por deuota pectora in eā prius  
 clinata. etiā atq; etiā faciam inclinatioa. Atq; in primis hi-  
 bitroz exordiendū. q̄ cum perspicuū sit iuxta philosophica

FIG. 45. Schwabacher type in Bernhard von Breydenbach, *Transmarina peregrinatio ad . . . sepulchrum dominicum in Jherusalem* (Mainz, E. Reuwich, 1486). British Museum, c. 20. E. 3. Reduced by one-fifth.

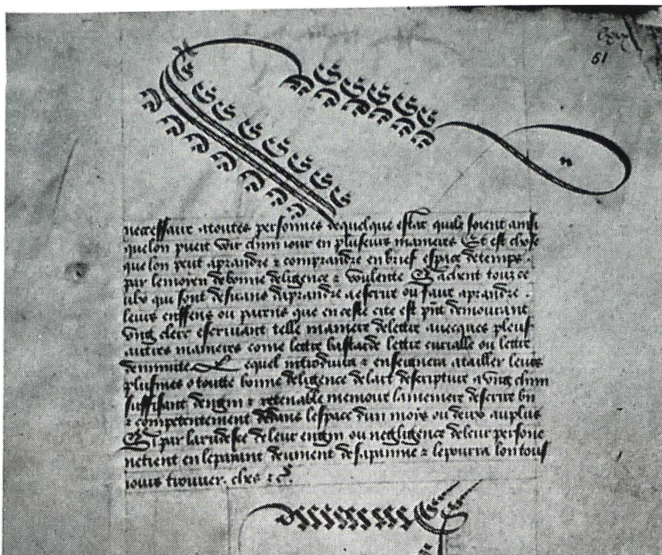


FIG. 46. From a model for the French *bâtarde* hand by a writing master at Nantes about 1460. Paris, Bibliothèque Nationale, Ms. lat. 8685. Reduced.

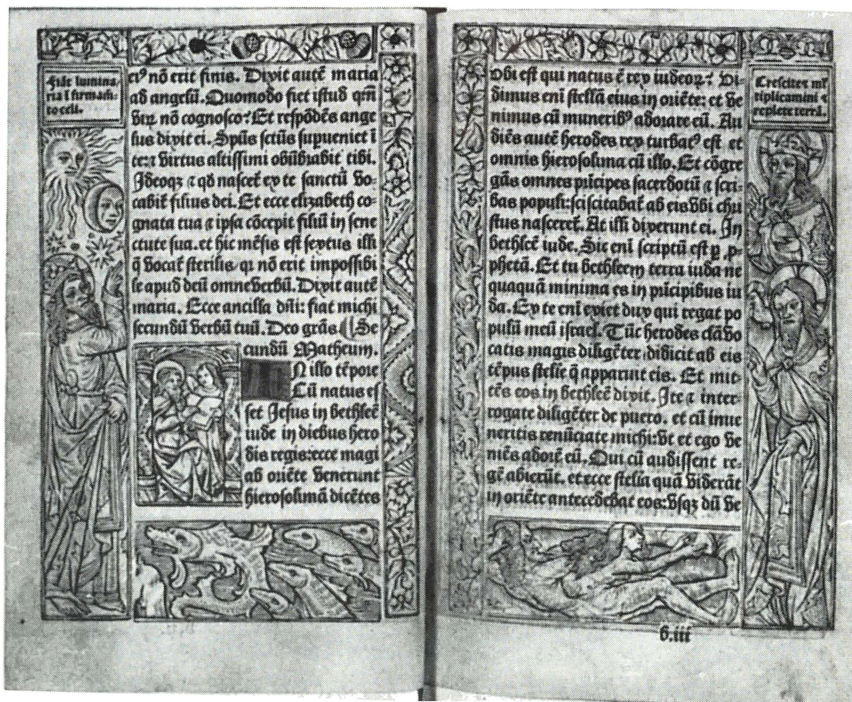


FIG. 47. Hours of the Virgin, use of Rome (Paris, P. Pigouchet, n.d., about 1495?). Bodl. 8° Rawl. 1092. Reduced.

ste maniere ne les auoit commandés faire. et que plus  
tost les pouoit auoir prins telz: ou que donnes suy auo  
ient estez. Or auoit le gentil soubdart vng géttil chap  
pellel pele asses plus long sur le deuant que par derri  
ere. Et par dessoubz le dit chappellel auoit vng bonnet  
fendu au dessus de lozeille. et estoit lacié au long de la  
fente d'une petite cordelece. Et en ceste maniere por  
toit assez des enseignemés des lozicars qui en la court  
suyuoient le chemin. Par lequel est en Icelluy lieu le  
gentil vieil art arriue. lequel portoit ses trespoures et  
tresclers semez cheueuy derriere. Et p<sup>r</sup> dessus vng bō  
a.iii.

FIG. 48. Lyonnese *bâtarde* type in *L'Abusé en cour* (Lyons, unidentified press, about 1485). British Museum, C. 6. b. 9.

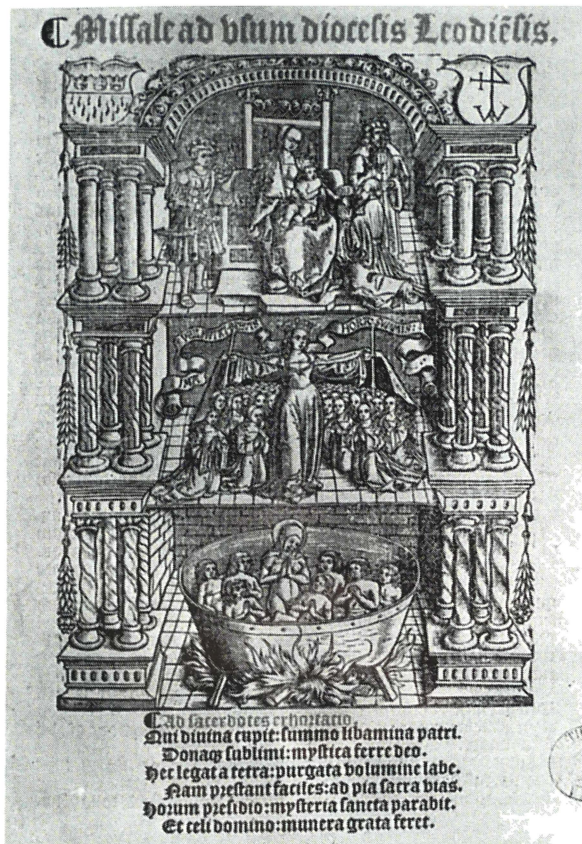
Dñra. b. post pascha. fo. lxxxiii.

**M**ane p̄ma sabbati surgens  
beata maria: in hanc hanc  
diei regē sceleris rediit ab infē  
ris: cū s̄tima victorā. **C**ur? restu  
renno: ol plena gaudio: cōsolaf  
oimā. Resurgit itaq̄ maria  
magdalena facta est p̄niticia. se  
tis sp̄i fratris: cuius moer̄ restu  
bitis: cōtracta gaudio. **O** beati  
oculi: dñus regē fecisti: morte iā  
deposita: p̄ma est iūta. **H**er est  
illa fcia: cur? cuncta crimina: ab  
sp̄i beata: eius lauit q̄ta. **C**ur  
dñi p̄olat et m̄cōpat: factu cla  
mas a d̄ cor amat: iūsi sup̄ oia.  
**S**is ignoat: q̄ aborat: b̄t p̄  
cet: illi delict: b̄t moer̄ timet cor  
ista. **O** maria mar̄ pia: stella ma  
ris appellaris: operū per merita  
**S**atri sp̄i coequata: b̄t iūsi sic  
voca: sc̄b honore iūbta. **I**lla  
m̄bi sperat: illa beata peccā  
tra lenice p̄moia: iūderit in  
certā. **I**lla cum fuit poita: per  
quā salus est exiit: b̄t resurgē  
t̄ n̄icia: mundi repler̄ leticia.  
**O** maria magdalena: audi vo  
ta laude plena: apud dñi illi cho  
ri illi: clem̄ fter conuicia. **E**t s̄s̄  
sime pietatis: qui te lauit a pec  
catis: seruis suos atq̄ tuos: m̄i  
be data beata: Amē bicat oia.  
**C**ēcundū Johanne xvi.  
**I**lla tpe. **D**icit ih̄sus di  
scipulis suis. Amē amē b̄t  
d̄ vob̄s: s̄ d̄ p̄terita pat̄ r̄  
noie meo: dicit vob̄s. **E**t q̄ m̄o  
bō nō p̄tina q̄d̄ in noie meo.  
**D**icit̄ e acrip̄tes: d̄t gaudio  
v̄m̄ sit plenū. **H**er in p̄urbis

FIG. 49. French textura type in *Missale Traiectense* (Paris, J. Hignam for W. Hopyl, 1497). British Museum, IB 40145. Reduced. Printed area  $9\frac{1}{4} \times 6\frac{1}{8}$  in.

Dicit ih̄sus discipulis suis. Ego sum p̄vinctus  
causa hanc mundi. Et ego in hanc  
causa mundi. Et ego in hanc causa  
mundi. Et ego in hanc causa mundi.  
Et ego in hanc causa mundi. Et ego  
in hanc causa mundi. Et ego in hanc  
causa mundi. Et ego in hanc causa  
mundi. Et ego in hanc causa mundi.  
Et ego in hanc causa mundi. Et ego  
in hanc causa mundi. Et ego in hanc  
causa mundi. Et ego in hanc causa  
mundi. Et ego in hanc causa mundi.

FIG. 50. French textura type in *Missale ad usum Sarum* (London, R. Pynson, 1500). Bodl. Auct. 1 Q infra I 56. Reduced. Printed area  $10 \times 7$  in.



**M**issale ad usum d

**A**d sacerdotes exhortatio.  
 Qui diuina cupit: summo libamina p  
 Donaꝝ sublimi: mystica ferre deo.  
 Hec legat a tetra: purgata volumine l  
 Nam prestant faciles: ad pia sacra l  
 Horum presidio: mysteria sancta para  
 Et celi domino: munera grata feret

FIG. 51. *Missale ad usum diocesis Leodiensis* (Paris, W. Hopyl, 1515). Bodl. Mason 1  
 title-page reduced and details in the size of the original.





FIG. 52. Fraktur types in Johann Neudörfer, *Gesprechbüchlein* (Nuremberg, 1549). Constance Meade Collection, Oxford.

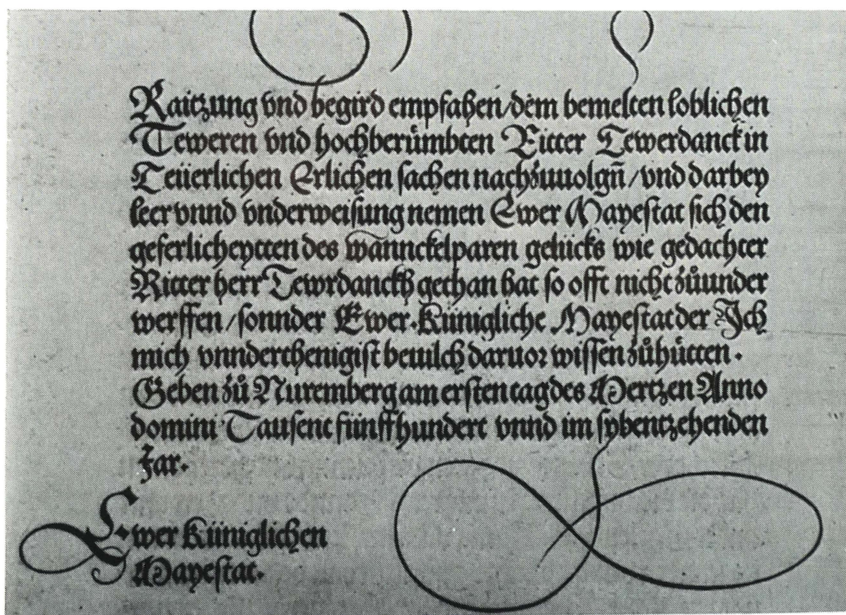


FIG. 53. The type of *Teuerdank* (Nuremberg, 1517). British Museum, C. 57. h. 3.

atro nisi aliquid firmitus fuerit: societate uitiorum deliniet  
 iuitiis: aut priuatis consiliis munienda. Nam isti duo uix  
 us alteri cesanam: alteri costutianarum tabernarum fundam  
 ut dixi fero oculis. Ego uos ad.iiii. kalen. uidebo: tuosq; oti  
 niens in medio foro uidero: dissuauabor. Me ama. Vale.

Primus in Adriaca formis impressit aenis  
 Vrbe Libros Spira genitus de stirpe Iohannes  
 In reliquis sit quanta uides spes lector habenda  
 Quom Labor hic primus calami superauerit artem

M. CCCC. LXVIII.

FIG. 54. The Roman type of Johann and Wendelin de Spira in Cicero, *Epistolae ad familiares* (Venice, 1468). Bodl. Auct. N infra II 2.



FIG. 55. The Roman type of Nicholas Jenson in Pliny, *Historia naturalis* (Venice, 1476). Bodl. Douc 310. Reduced by a half.

fieri posse uix puto : sed plane quia ita debemus inter nos : neq; enim arbitror carior rem fuisse ulli quenquam ; q̄ tu sis mihi. Sed de his et diximus alias satis multa ; et saepe dicemus : nūc autem ; quoniam iam quotidie ferè accidit postea , q̄ e Sicilia ego , et tu reuersi sumus ; ut de Aetnae incendiis interrogaremus ab iis , quibus notum est illa nos satis diligenter perspexisse ; ut ea tandem molestia careremus ; placuit mihi eum sermonem conscribere ; quem cum Bernardo parente habui paucis post diebus , q̄ rediissemus ; ad quem reiciendi essent ii , qui nos deinceps quippiam de Aetna postularent. Itaq; confeci librū ; quo uterq; nostrum cōmunitè uteretur : nā cum essemus in Noniano ; et pater se ( ut solebat ) ante atrium in ripam Pluici contulisset ; accessi ad eū progresso iam in meridianas horas die : ubi ea , quae locuti

FIG. 56. The Roman type of Bembo, *De Aetna* (Venice, Aldus Manutius, 1495). Bodl. Auct. 2 R III 86.

DELLE EPIST. FAM. I 10

*quale , hauendoti io scritto di Milone , meritamente rimdesti , ma alla Romana , come parlano gli huomini nō inetti , che non è persona , che di bontà , & di prudenza l'auanzi . al che si aggiunge , che nelle ragioni ciuili egli è dottissimo , & ha una memoria singulare . non domando , che tu lo faccia prefetto , ne Tribuno , o gli dij qualche altro grado : solamente domādo , che tu l'ami , et usi uerso lui la tua solita cortesia . ma nō però mi fie discaro , se tū piacerà anche di ornarlo di simili fregi di gloria . & final mēte togliēdolo delle mie mani , pōgolo , come si dice , nelle tue mani uittoriose , et fedeli . sono forse piu ceremonioso*

FIG. 57. The Italic of Aldus in Cicero, *Le epistole famigliari* (Venice, 1545).

Squallor ac rubigo semp est malorū: bonorum autem ni-  
 tor atq; decus.  
 Ornamento pietatis nihil addi pōt candidius  
 Impietatis sordī fœdīus esse nihil ualet.  
 Mores cōplexi bonos uoluptates corpis execrant.  
 Moralis discīplīna cōtinentiæ tutrix est: incontinentiæ  
 grauis hostis.

Finit Epistolare Marij philelfi elegantissimū: Basileæ per  
 magistrū Ioannem de Amerbach summa lucubratione  
 impressum: Anno octogesimo sexto supra millesimū qua-  
 terq; centesimū.

FIG. 58. A Pica (82-mm.) Roman type of Johannes Amerbach in J. Philephus, *Epistolare* (Basle, 1486). Bodl. Auct. 4 Q VI 50.

Romūlidaq; duces talis & ipse fui.  
 Dum uult supremo duri certamine martis  
 Sors dare me pessum: sustulit ad superos.  
 Finis opis. Sequitur epigramma A scēsi ad lectores.  
 Nunc Beroaldinas studiosi quærite merces  
 Lugdunum appulas dexteritate noua  
 Vix rostra optatum pulsabant ærea portum  
 Cum pater e puppi talia Trechsel ait  
 Iam satis egregiam mecum nauastis opellam  
 Dædalii focii: stringite uela citi  
 Soluite uota deo latiq; resumite uires  
 Cras uento & remis magna iteranda uia est  
 In ipsū Lugdini Anno. M. CCCC. XCII. iiii. septēbris.

FIG. 59. The smaller Roman type of Johann Trechsel in P. Beroaldus, *Orationes et poemata* (Lyons, 1492). Bodl. Auct. 2 Q V 10.

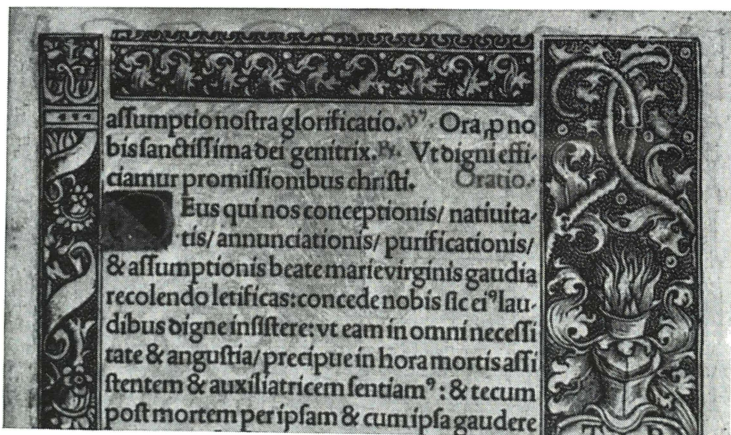


FIG. 60. The Roman type of *Horæ ad usum Romanum* (Paris, Thielman Kerver, 1513). British Museum, C. 52. b. 9.

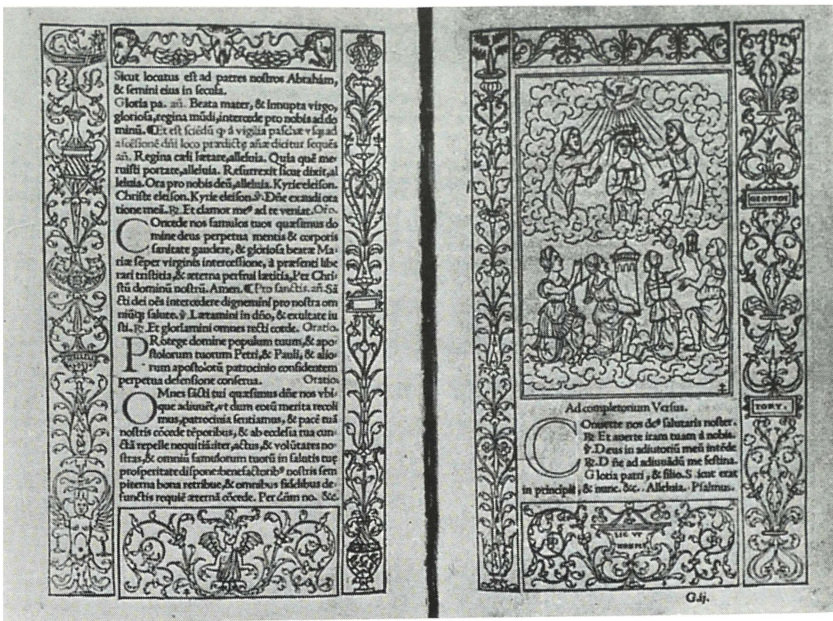


Fig. 61. Tory's Hours of 1525 (*Heures à l'usage de Rome*, Paris, S. de Colines for G. Tory). Bod Douce BB 154. Reduced. Printed area  $6\frac{1}{2} \times 3\frac{7}{8}$  in.

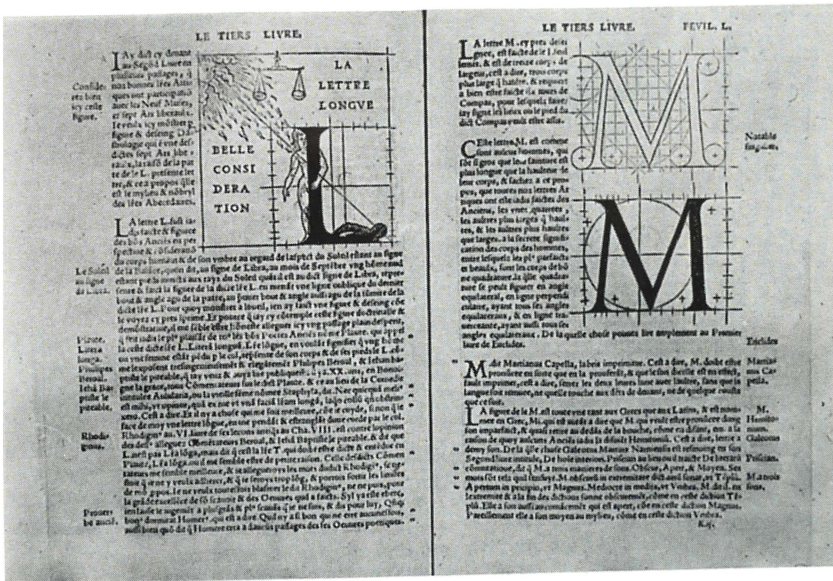


Fig. 62. Tory's *Champ fleury* (Paris, 1520), fol. xlix-l. Reduced. Printed area of one page  $8\frac{1}{2} \times 5\frac{1}{2}$  in.

# Ad lectorem linguæ GALLICAE STUDIO SVM.

L  
Ibros Galeni de vsu partium corpo-  
ris humani quum ad Græcum exem-  
plar magna cura præcipuóque stu-  
dio non modo recognouissem, sed  
propemodú nouos reddidissem, vigi-  
liis, curis, labore fractus, materiã disquisiui, in qua  
ingenii vires longiore studio & grauiore fessas re-

FIG. 63. Garamond's 'Gros Canon' and 'Gros Texte' Romans in Jacques Du Bois, *In linguam gallicam isagoge* (Paris, R. Estienne, 1531). British Museum, 626. c. 5.

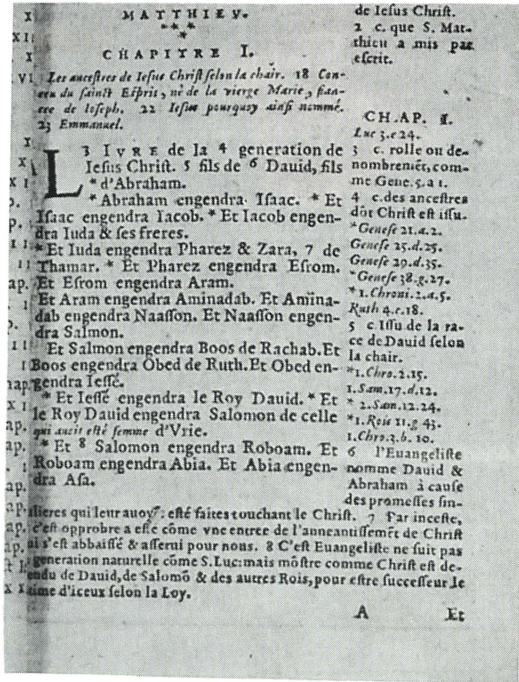
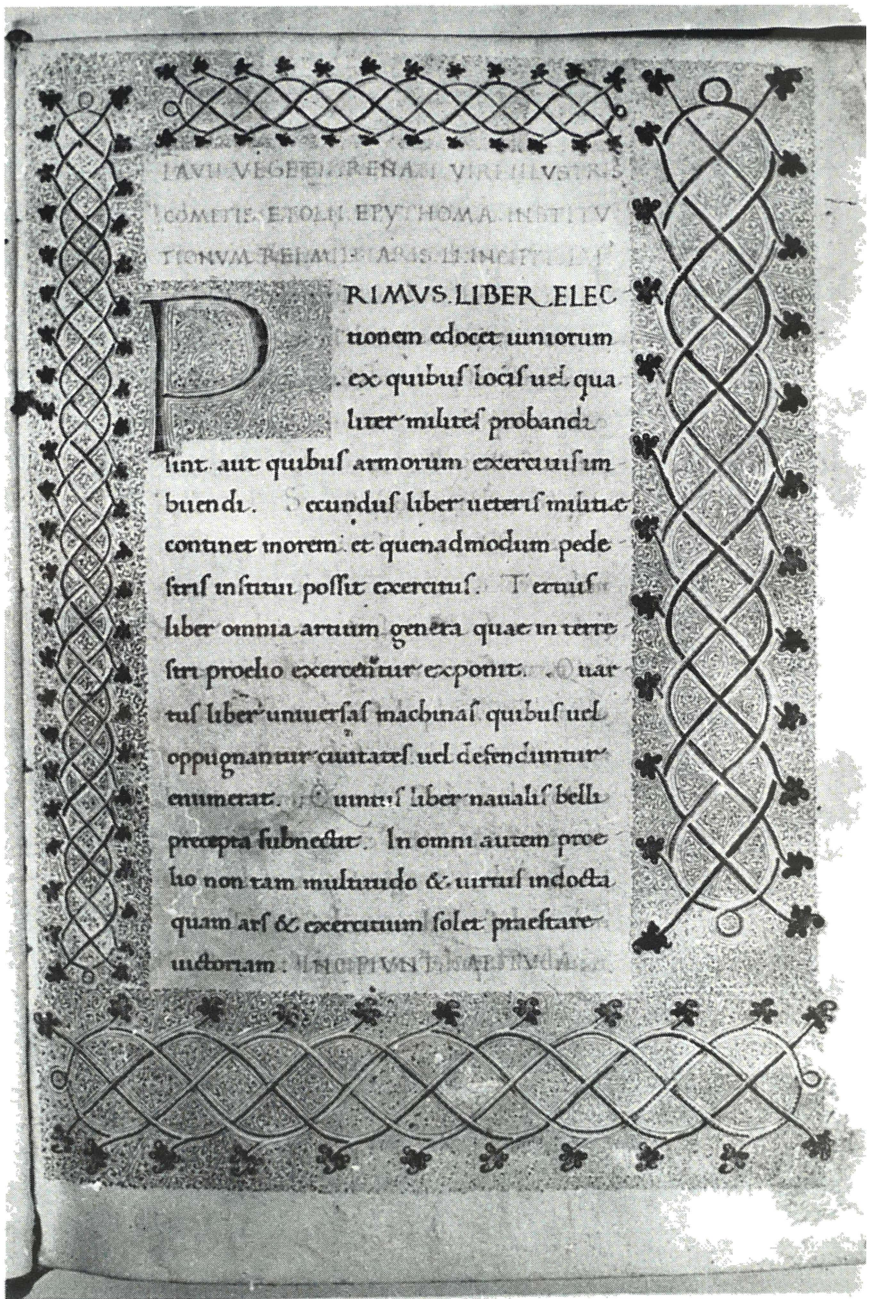


FIG. 64. *Le Nouveau Testament* (Paris, P. Haultin, 1567), set in Haultin's 'Grosse Nompaille' for text and 'Petite Nompaille' for notes. British Museum, 3022. a. 35.

A B C D E F G H I K L  
M N O P Q R S T V  
X Y Z a b c d e f g h i l  
m n o p q r s t u v x y z  
1 2 3 4 5 6 7 8 9 0 , . ' ! ? ; : - ' ¨  
Æ æ ð ſ ſ ħ ſ œ ſ ſ ſ ſ ſ ſ ſ ſ  
& ã á à â ç ě é è ê ë ě ĭ í ï ï ĩ ĩ ĩ ĩ ĩ ĩ  
ñ ñ ò ó ò ô õ þ þ þ þ þ þ þ þ þ þ þ þ þ þ þ þ  
ř ť ů ú ù û ü Γ Δ Θ Λ Μ  
Ξ Ο Π Σ Υ Φ Χ Ψ Ω

FIG. 65. Garamond's 'Gros Canon' in its later state. Type cast lately at the Museum Plantin-Moretus in Plantin's matrices.



LAVI VEGEII RE RARI VIRI ILVSTRIS  
COMENTE ET OLIN EPYTHOMA INSTITV  
TIONVM RE RARI AVIS LE INCITV

**P** RIMVS LIBER ELEC  
tionem edocet iuniorum  
ex quibus locis uel qua  
liter milites probandi  
sint aut quibus armorum exercitiis im  
buendi. Secundus liber ueteris militie  
continet morem et quenadmodum pede  
stris insatu possit exercitus. Tertius  
liber omnia artium genera quae in terre  
sini proelio exercentur exponit. Quar  
tus liber uniuersas machinas quibus uel  
oppugnantur ciuitates uel defenduntur  
enumerat. Quintus liber naualis bella  
precepta subnectit. In omni autem proe  
lio non tam multitudo & uirtus indocta  
quam ars & exercitium solet praestare  
uictoriam. IN OPIVNI RE RARI AVIS

FIG. 66. A polished example of the humanist book hand. Vegetius, *Institutiones rei militaris*, written at Naples about 1450 for Alfonso V, king of Aragon. Bodl. MS. Canon. class. lat. 274. Reduced. The work measures 10½ × 7 in.





SPECIMEN  
**CHARACTERVM SEV  
TYPORVM PROBATISSIMORVM,  
INCONDITE QVIDEM, SED SECVN-  
DVM SVAS TAMEN DIFFERENTIAS PRO-  
POSITVM, TAM ISPIS LIBRORVM AVTORIBVS,  
QVAM TYPOGRAPHIS APPRIE VTILE**

**Esais Capite  
Io. LIII.**

**Canon de Ga  
ramond.**

**¶ Quis creditur Auditui nostro: & brachium Iehouæ cui Reuelatum est, Et ascendit sicut virgultum C O R A M eo, & velut radix de terra deserti: Non erat forma ei, neque decor. A. E.**

**A**speximus autem eum, & non erat aspectus, & non desiderauimus eum videre. Despectus fuit & Reiectus inter viros vir dolorum, & expertus Infirmatate, & veluti abscondio faciei Ab eo, despectus inquam, & non putauimus eum. Verè languores nostros ipse tulit, & dolores nostros portauit, Nos Autem reputauimus Eum plagis affectum, Percussum à Deo & HVMILIATVM. W. H. S. G.

**I**pse enim vulneratus & propter preuaricationes nostras Attritus est. *Nec aperuit os suum. A carere & indige sublatum est. Gene* *rationem eius Qui enarrabit, Quis abestis? est terra videntium, propter preuaricationem populi. Nec plaga fuit ei. Et dedit eum impijs sepulturam eius. Et cum diuinit in Morie sua: Quamuis iniquitatem non fecerit, Nec dolere fuerit in ore eius. Iehouah Autem voluit conterere eum & agrotare fecit eum. Quomodo posuerit supinum sacrificium pro delicto Anima eius.*

**V**idebit in psolonghiis dies, & voluntas Iehouæ in Manu eius prosperabitur. *Et cum prauaricationibus inuenerit eum, ipse quoque peccatum Multorum* *turabitur, scientia sui iustificabit iustus seruus meus multos, & iniquitates ipsorum ipse portabit. Ideo partem dabo ei cum multis & cum fortibus diuidet spolia, Et quod effudit in MORTEM ANIMAM suam,*

**A**d dexteram enim & sinistram dilataberis, semen quoque tuum Gentes hereditate accipent. *Ad dexteram, Quam speranda fuerit, dixit Deus tuus. Memento paru deliquisti, et in Misericordibus magnis congregabo te. In monumento tera abscondit faciem Meam ad monumentum tuum, in misericordia Imperatoria. Misericordia sum tui, dixit Redemptor tuus Iehouah.*

**N**am ve aquæ Noha hoc michi, cui iurasti quod non transiret aquæ Noha vltra super terram, sic iurasti quod non staret contra te. *Et parum ea Margaritæ semetipsum. Et pars vana ea lapidibus carbonatis. Aliqua omnia terrarum, haec in diebus meis. Et ad vltimum finis facientem. In montibus tuum in lapidibus dispersis habitum. Pueri quoque filii tuos dicit Iehouah. Et Misericordiam propter iniquitatem tuam in conspectu oculi tui. Insuper abierit ab opprobrio gloria. Quia iniquitatem tuae in conspectu quoque tui. En congregate in te populum contra te aduersus Me. Quisquis congregauerit te, faciam contra te.*

**E**sset ego cernens fabrum ferentem. *Et proferentem instrumentum in operum suam, Et ego qui sum cernens vultum me absconditum. Omnes enim in diebus meis. Quare appropietis arguerent me, non parum. Et Iehouah super me in quod facerent me pueri vultus cernens me. Et cernens bene cernens delictum arguit me propter delictum vestrum. In diebus meis. Et cernens ad vultum me. Et cernens vultum me.*



Fig. 68. A specimen by Conrad Berner, typesetter of Frankfurt am Main, 1592. Reduced from collytype reproduction in Gustav Mori, *Das Schriftgießergewerbe in Frankfurt am Main und Offenbach* (Frankfurt a. M., 1926). Printed area 18 1/2 x 12 in.

A B C D E F G H I K  
 L M N O P Q R S T  
 V X Y Z.

*Lettre capitale de la  
 Cour. taillé sans  
 feu. mon pere.*

abcdefghijklmnopq  
 rstvxyz: & & ' & j ft  
 ff ff fi fi (æ œ) ç ε ρ ρ q̃ q̃

*Saint Augustin*  
 Les loix & iugemens ne peuvent auoir lieu  
 où la paix est ancantie & ostée. Celle paix  
 doit estre refusée laquelle cache souz foy la  
 guerre. Ha bon Dieu! ya-il homme de bon  
 sens qui mesure plus par les parolles, que par  
 les effectz celuy qui fait la paix, ou qui gou-  
 uerne les affaires de la guerre?

abcdefghijklmnopqrstuvwxyz&æ  
 st fi fi fi fi fi fi fi fi fi fi fi fi fi fi fi fi  
 € § ¶ x s p p p q q q q a e i o u a c i o u a c i o u  
 a c i o u e i u i 1 2 3 4 5 6 7 8 9 0 2 4 b g 3 3 3 3 3 9  
 A A B C D E F G H I K L M N O P Q R S  
 T V X Y Z Æ A B C D E F G H I K L M N O P Q R  
 S T V X Y Z Æ Y X A C M N R F Z & &



**זכריה** *Cour. Hebreu*

והיה ביום ההוא לא יהיה אור יקרות  
 יקפאון: והיה יום אחד הוא יתע  
 ליהוה לא יום ולא לילה והיה לעת  
 ערב יהיה אור:

אמר אחריו ולא יום ולא לילה: ויתל לא יהא נהורא אהין  
 עדי וגלדי: והיה יום אחד: אוט היום יהיה יום מיוחד  
 לה: שידוע ט בבבכותיו ובגפלאותיו שיעשה באות  
 היום: לא יום ולא לילה: לא יהיה כולו יום ולא כולו לילה:  
 כל' לא יהיה כלו צרה ולא כלו רוחה: והיה לערב ערב  
 יהיה אור: לעת הצרה הגדולה שיצא הערב בעלה אז  
 יבא ה' ונתלס כמים ההס:  
 כפארוש גולאלונו ליערצפתי עשה' כחדס ניקן בשנת  
 1592.

*Grosse de Gêse hebraïque: a fonder par  
 le gros Romain. toutes les lettres trois lettres  
 taillées par feu mon pere.*

THEA  
 Vitæ h

FIG. 69. Specimens of work by Guillaume I Le Bé annotated by his son and sent to Jean Moretus. Museum Plantin-Moretus, Arch., vol. 153, fol. 20. Reduced. Size of original 11 x 7 1/2 in. The Saint Augustin was probably cut by Le Bé's pupil, Jacques de Sanlecque the elder.

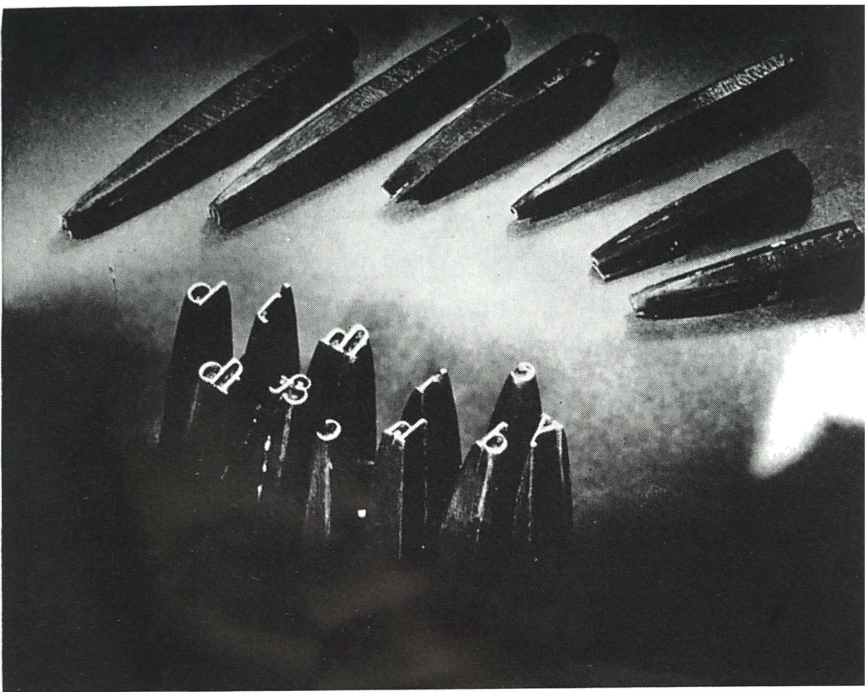


FIG. 70. Punches by William Caslon the elder for Pica Roman. University Press, Oxford. Photograph by J. W. Thomas.

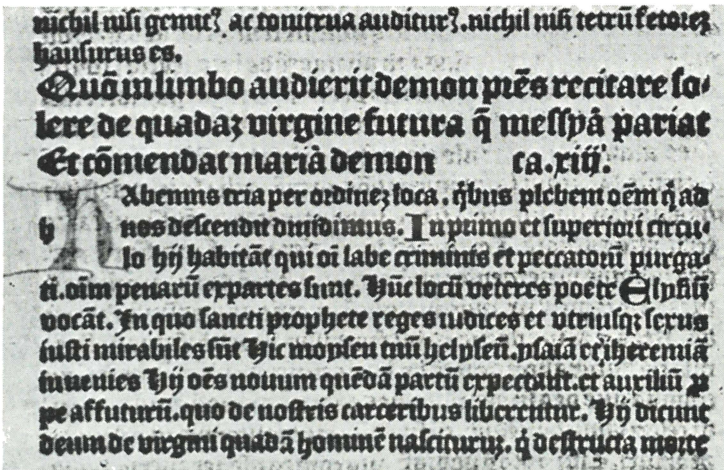


FIG. 71. The English and Pica Black Letters of Henric de Lettersnijder in *Historia per-  
 pulchra de Anna sanctissima* (Antwerp, G. Bac, n.d., not after 1511). Bodl. Douce A 477.

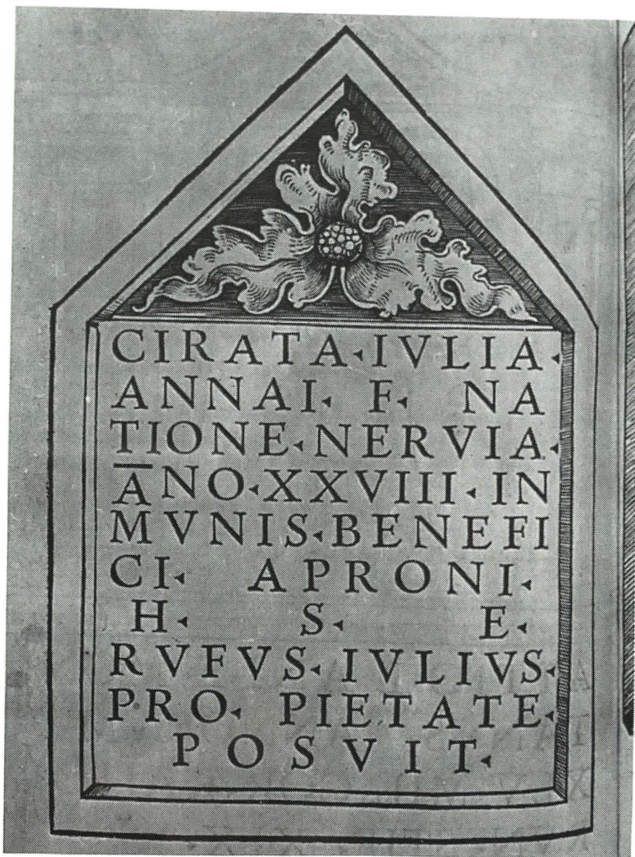


FIG. 72. Roman capital letters in Dietrich Gresmund, *Collectanea antiquitatum in urbe et agro Moguntino*, ed. J. Huttich (Mainz, J. Schöffer, 1520). Bodl. D 88 Art. Reduced. Printed area  $8\frac{1}{2} \times 5\frac{3}{4}$  in.

# CICERON

## LIBRI TRES D

FIG. 73. The capital letters of Gresmund's book with others larger of the same design in Cicero, *De officiis* (Basle, J. Herwagen, 1569).

# ΓΡΗΓΟΡΙΟΥ ΤΟΥ

ΝΑΖΙΑΝΖΗΝΟΥ ΤΟΥ ΘΕΟΛΟΓΟΥ ΑΠΑΝ-

τα, τὰ μέγχι νῦν μὲν ἐν ῥησιν ὁμιλοῦσα, ὡρ ἄξιον σε-  
λίς ἡ δ' οὐτὸν ἀποδέχεται.

ΤΟΥ ΑΥΤΟΥ ΒΙΟΣ, ΣΥΓΓΡΑΦΕΙΣ ΥΠΟ

Σεΐδα, Σωφρονία, καὶ Γρηγορίου τῷ  
πρεσβυτέρου.

FIG. 74. Greek type of two sizes in the title of the works of St. Gregory of Nazianzus (Basle, J. Herwagen, 1550). Constance Meade Collection, Oxford. Slightly reduced.

R I S A C N O V I T E S T A M E N T I, O M N I A,  
*innumeris locis nunc ædum, & optimorum librorum collatione,*  
*& doctorum uirorum opera, multo quàm unquam antea*  
*emendatiora, in lucem edita.*

B A S I L E A E, P E R I O A N.

*Heruagium,* M D X L V.

*Mense Martio.*

FIG. 75. Italic type in the title of *Divinae scripturae . . . omnia* (Basle, J. Herwagen, 1545). Constance Meade Collection, Oxford.

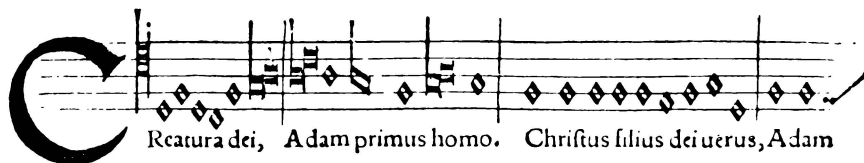


FIG. 76. A line of music from Johann Frosch, *Rerum musicarum opusculum* (Strasburg, P. Schöffler and M. Biener, 1535). Paris, Bibliothèque Nationale, Rés. V 539. Slightly reduced.

# M·D·XXXV·

Sapientes ubi audierint promouebunt, & cordati industriam consequentur, ut intelligant sententias, in terpretationem, sapientum consilia & exempla.

Præ omnibus fructibus sapientū com para sapientiam, & præter facultates tu as intelligentiam posside. Quod si eam magnificeris, te uicissim exaltabit.



**S**olomon Davidis filius, rex Israelitarum, sententias cōscripsit, inde discant sapientia, castigatio, intelligentia, prudentia, iustitia, ius & rectitudo, & castiditas imperii, & prout sententiam & consilia prout: Sapientia foris clamabit, in plateis uocē edit, multitudinis præter, pro portis clamantis, & in urbe concionatur. Quouique tandem imperiti amabitis imperitiā, & subditiorum feris animis delectamini, & fatui scientiam odistis: Ad doctrinam autem ad interpretationem meam. Ecce spiritum meum uobis efflato, sententiam meā exponam. De mensuris scientiæ uirtutum.

Deus enim ex ore suo sapientiam & scientiam, & intelligentiam largitur, rectus dat suum. Proximi promouebunt, ius dicitur, & iuxta sanctorum suorum astodit. Ita de mī intelliges iusticiam, ius, recta & bonas uias omnes.

Per me consiliū & successus est. Ego intelligentia sum, per me est potentia. Per me reges regnant, & principes constituunt iusta. Per me domini dominantur, & regnant omnes iudices terre.

ὁ μὲν γὰρ τῷ θεῷ κρείσσον ἐστὶν ἄριστον, ἢ ὁ ὀλιγοφρονέωντες, νοήμασιμ οἰκον ἔχοντες ἀντὶς ἢ δὲ ζωὴ, σὺ δὲ ἀλλοθα δυνάμειοσι. χάριματα δ' ὀλιγοφρονέωντες.

אבגדהוהט  
יבלמנספצקרתוסזח

**S**olt das heyltumb nit den bunden gebe/ Vnd ein were perle solt ir nit für die fetw werffen/auff das sie die selbigen nit durc tretten mit iren füßen/vnd sich wunden/vn euch derraissen. 28.

Alles das ir wöllent/dab euch die seut thun solt/das thunt ir auch ir/ Das ist das gesey vn die worten. Des Herren außsicht auff die vn söchtten. Jo. Petreus

Sapientes ubi audierint promouebunt, & cordati industriam consequentur, ut intelligant sententias, in terpretationem, sapientum consilia & exempla.

Præ omnibus fructibus sapientū com para sapientiam, & præter facultates tu as intelligentiam posside. Quod si eam magnificeris, te uicissim exaltabit.

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אבגדהוהט  
יבלמנספצקרתוסזח

FIG. 77. (Left) The type specimen of Johann Petri (Nuremberg, 1525). Leipzig, Deutsches Buchmuseum. Reduced from a colotype reproduction in G. Mori, *Das Schriftgießergewerbe in Süddeutschland* (Stuttgart, 1924). Printed area  $9\frac{1}{4} \times 2\frac{3}{8}$  in. (Right) Details in the original size.

**POSSILII ITALICI CLARISSIMI POETAE DE BELLO PUNICO libri septemdecim.**

**CVM ARGVMENTIS HERMAN-  
ni Buschij, & scholijs in margine adiectis, quae vice  
vberis commentarij esse possunt.**



**P A R I S I I S  
Apud Simonem Colinaeum  
I 5 3 I**

FIG. 78. A title-page of Simon de Colines, showing his first Italic



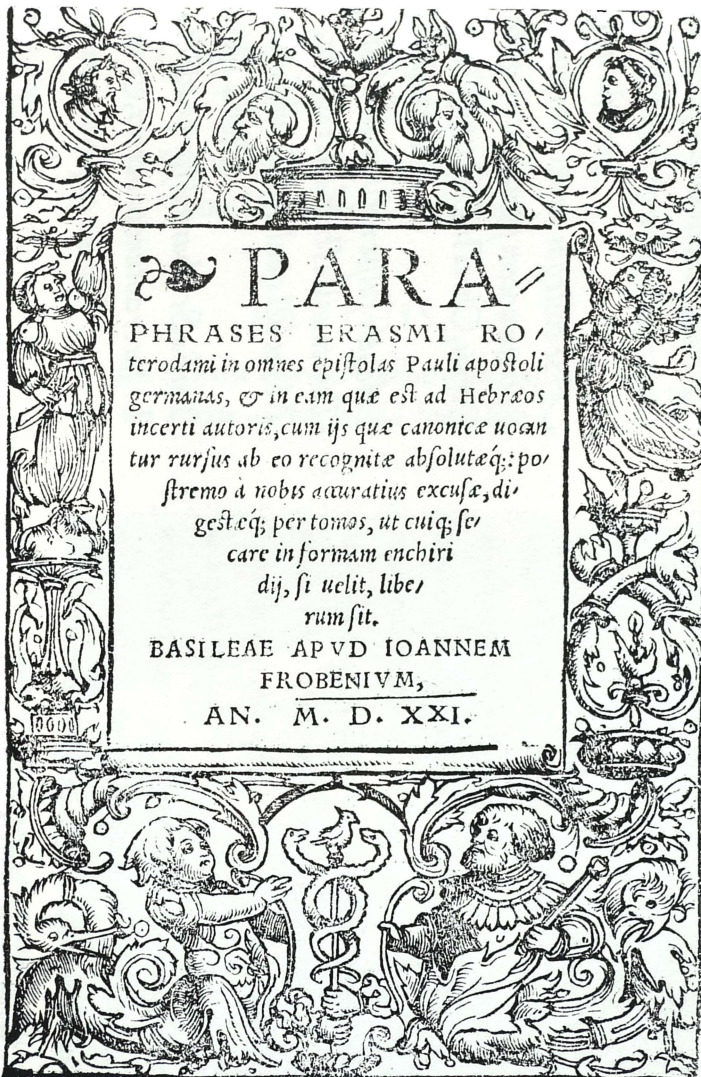


FIG. 79. Froben's second Italic in a title-page of 1521.

Passiamo hora le frondute spalle del' Appennino, et investighiamo tutta  
 la sinistra parte de Italia, cominciando, come fare solemo a levante.  
 Intrandò adunque ne la Romagna, dicemo, che in Italia habbiamo ritro-  
 trovati dui volgari, l'uno a l'altro con certi convenevoli contrarij op-  
 posto, de li quali uno tanto femminile ci pare per la molizia de i voca-  
 buli, e de la pronunzia, che un homo (anchora che virilmente parli) è te-  
 nutò femina; questo volgare hanno tutti i Romagnuoli, e specialmen-  
 te i Forlivesi, la Città de i quali, avegna che novissima sia, non di me-  
 no pare esser posta nel mezzo di tutta la provincia; Questi afferman-  
 do dicono deusci, et facendò careze soljano dire, odo meo, e corada  
 mea. Bene habbiamo inteso, che alcuni di costoro ne i paesi loro si  
 sono partiti dal suo proprio parlare, cioè Thomaso, et Ugolino  
 Buccicula Faentini. L'altro de i dui parlari, che havemo detto, è talmen-  
 te di vocaboli, et accenti birsuto; et Ispido, che per la sua rozza aspe-  
 rità non solamente discorrea una donna che parli, ma anchora fa dubio

FIG. 80. The type of Dante, *De vulgari eloquentia*, translated by G. G. Trissino, 1529.  
 Printed by Tolomeo Janicolo at Vicenza

O D A R V M L I B. I I.  
 Qui cibos sanctis uivis parabant,  
 Deq; communi stipe suggerebant  
 Fercula mensis:  
 Ante collegas animosus omnes,  
 Spiritu uocem stimulante sancto  
 Exeris, Christi Domini Deiq;  
 Numina fassus.  
 Angeli fulsit rutilantis instar  
 Tum tua illustri facies colore,  
 Mane uel qualis rubicunda claro  
 Stella Diones.  
 Turba Scribarum furijs adacla,  
 Et sacerdotum proceres, & omnis  
 Urbis Hebrææ populus minantur

FIG. 81. The Great Primer Italic of Sebastian Gryphius in  
 Salmonius Macrinus, *Odae* (Lyons, 1537). Bodl. Antiq. f  
 F 1537/1. It appears to be the same as that in Fig. 75 but  
 with better-justified capitals.

Per Albertum Pighium Campensem.

Cuiuscunque tandem fidei fueris,  
legisse non pœnitebis.

Singularum controuersiarum ca-  
pita, uersa pagella indicabit.

PARISIIS,

Ex officina Carolæ Guillard sub insigni  
Solis aurei, in uia Iacobæa.

1542.

FIG. 82. A Great Primer Italic with upright capitals common in French printing about 1539–50, possibly an earlier state of the typeface shown in the figure below. Part of a title-page in the Constance Meade Collection, Oxford.

*Italoque de la Taille de Garamond / qui est sur le  
gros Romain .*

*Iuris præcepta sunt hæc, Honesté uiuere, alterum  
non lædere, suum cuiq; tribuere. Huius studij duæ  
sunt positiones, Publicum & priuatum. Publicum  
ius est, quod ad statum rei Romanæ spectat. Priua-  
tum, quod ad singulorum utilitatem pertinet.*

*Dicendum est igitur de iure priuato, quòd triperti-  
tum est: collectum est enim ex naturalibus præcep-  
tis, aut gētium aut ciuilibus. Ius naturale est quòd*

FIG. 83. The Great Primer Italic of Garamond. A specimen annotated by Guillaume II Le Bé and sent to Jean Moretus. Museum Plantin-Moretus, Arch., vol. 153, fol. 20.

C. CRISPI  
SALLV-  
STII

De L. Sergii Catilinæ coniuratione,  
ac Bello Iugurthino historiarum.

*Enselem in M. T. Ciceronem Inuictum.  
M. T. Cic. in C. Crispum Sallustium Re-  
criminatio.*

*Porcij Latronis Declamatio contra L. Ca-  
tilinam.*

*Fragmenta quedam ex libris historiarum  
C. Crispi Sallustij.*

VIRTUTE DVCE,



COMITE FORTVNA.

APVD SEB. GRY-  
PHIVM LV-  
GDVNI,  
1547.

QVINTI  
CVRTII  
DE

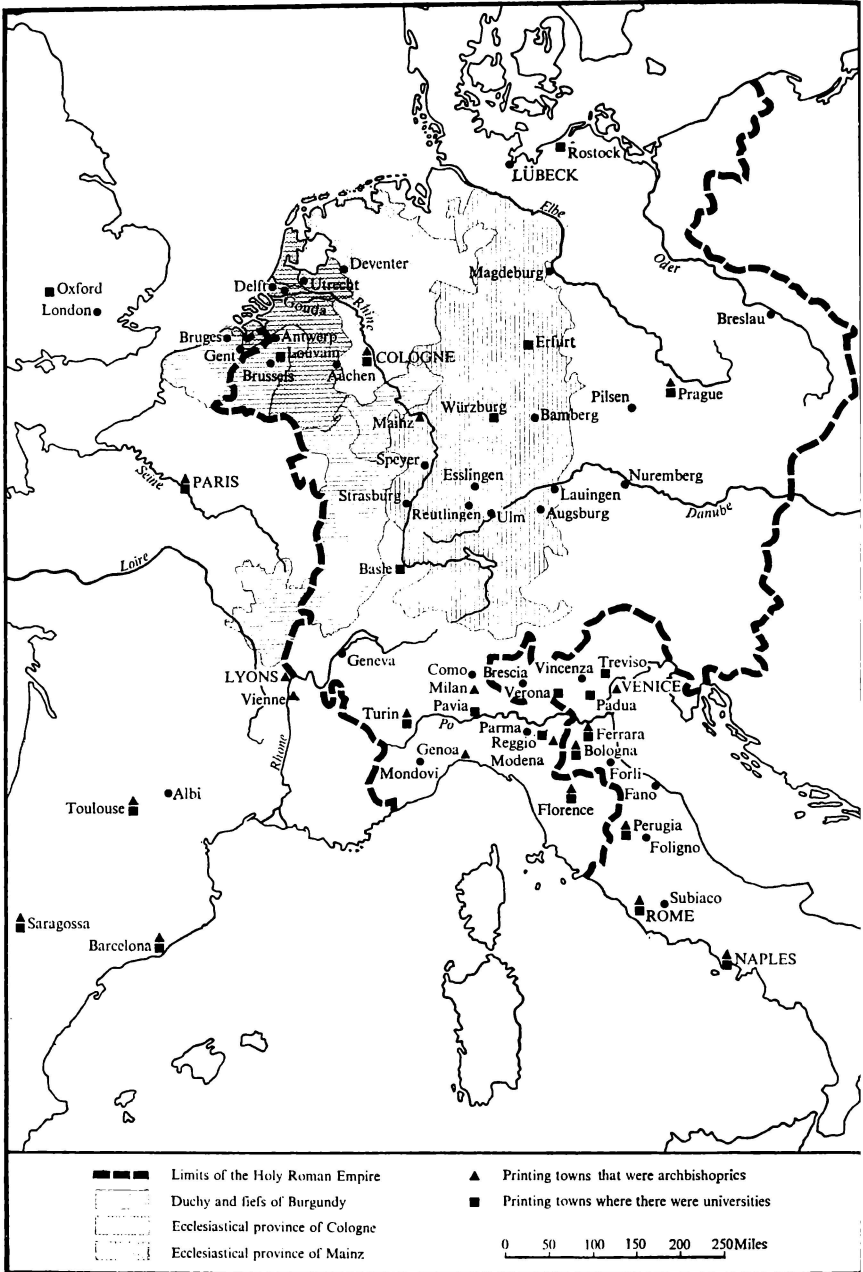
*Rebus gestis Alexandri Magni Macedonum re-  
gis Historia luculentissima, multò maiore, quàm flo-  
hactenus unquam, uigilantia emendata, mini-  
meq; pœnitenda eorum, qua antea deside-  
rabantur, accessione locupletata:  
ut clarius proxima cogno-  
sces pagella.*

FIG. 84. Italics in Granjon's earlier manner in the printing of Sebastian Gryphius, probably Granjon's 'Nompaille' and 'Saint Augustin première'. Title-pages in the Constance Meade Collection, Oxford.

OLD NAMES FOR BODIES OF TYPE  
IN ENGLISH, FRENCH, GERMAN, AND  
DUTCH AND TYPICAL VALUES FOR  
TWENTY LINES IN MILLIMETRES

- <sup>m</sup> NONPAREIL. *Fr.* and *Ger.* Nompaille; *Du.* *between* Nonparel and Paarl. 20 lines 43 mm.
- <sup>m</sup> MINION. *Fr.* Mignonne (*Plantin* Coronelle); *Ger.* and *Du.* Kolonel. 20 lines 48 mm.
- <sup>m</sup> BREVIER. *Fr.* Petit texte (*Plantin* Bible); *Ger.* Petit; *Du.* Brevier. 20 lines 54 mm.
- <sup>m</sup> BOURGEOIS. *Fr.* Gaillarde (*Plantin* Colinaeus); *Ger.* Borgis; *Du.* Galjart. 20 lines 60 mm.
- <sup>m</sup> LONG PRIMER. *Fr.* Petit romain or Garamond; *Ger.* Corpus or Garmond; *Du.* Garmont. 20 lines 67 mm.
- <sup>m</sup> SMALL PICA. *Fr.* Philosophic; *Du.* Descendiaan. 20 lines 76 mm.
- <sup>m</sup> PICA. *Fr.* Cicéro (*Plantin* Mediane); *Ger.* Kleine Cicero (*approx.*); *Du.* Mediaan. 20 lines 86 mm.
- <sup>m</sup> ENGLISH. *Fr.* Saint Augustin (*Plantin* Augustine); *Ger.* *between* Grobe Cicero and Kleine Mittel. 20 lines 96 mm.
- <sup>m</sup> GREAT PRIMER. *Fr.* Gros romain or Gros texte (*Plantin* Texte); *Ger.* Tertia (*approx.*); *Du.* Tekst. 20 lines 122 mm.
- <sup>m</sup> DOUBLE PICA. *Fr.* Gros parangon (*Plantin* Ascendonica); *Ger.* Text (*approx.*); *Du.* Assendonica. 20 lines 144 mm.
- <sup>n</sup> 2-LINE GREAT PRIMER. *Fr.* Petit canon; *Ger.* Kleine Canon (*approx.*); *Du.* Klein canon. 20 lines 220 mm.
- <sup>n</sup> CANON. *Fr.* Gros canon; *Ger.* Grobe Canon; *Du.* Parijssche canon. 20 lines 320 mm.
- <sup>n</sup> Bigger types are measured in units of Pica, e.g. 5-line Pica, 6-line Pica.

# SITES OF PRINTING IN 1476



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