

Decoration and Illustration¹

PRINTED PICTURES

Pictures were printed both from relief woodcuts and from intaglio copperplates before movable type was invented. Both processes continued to flourish as media for separate pictures, and both were rapidly applied to the decoration and illustration of books. During the early days, and for most of the sixteenth century, woodcuts, which could conveniently be printed in the forme along with the type, were much commoner in books than copperplates. They were used for elaborate illustrations, stylized ornaments, initial letters, and for words in large or complex letter-forms that were not available as type. By the end of the sixteenth century, however, engraved plates, which had to be printed separately from type, were replacing blocks for large illustrations and decorated title-pages. Woodcuts continued to decline in popularity and quality during the seventeenth century, and by its end were chiefly used for technical diagrams, illustrations in cheap editions, and stock ornaments. Meanwhile copperplates, their range of expression increased by various developments of technique, had become the normal medium for all but the cheapest book-illustration, and for a good deal of minor ornament as well. Despite the incompetence of most eighteenth-century block-makers,^{1a} woodcuts never quite disappeared, and they returned to favour in the delicate form called 'wood-engraving' at the end of the hand-press period.

RELIEF BLOCKS

For most of the period woodcuts for letterpress printing were made of a hard, fine-grained wood (such as box or a fruit wood) cut into the side of the plank along the grain. Early woodcut initials, coats of arms, etc., were sometimes made from wood cut across the grain, but the use of end-grain blocks remained uncommon until the later eighteenth century. A few early blocks were made of metal—or at least were faced with metal—probably an alloy of copper or lead which could be cut with steel; no doubt type-metal was sometimes used for this purpose.

The thickness of the blocks intended for use in printed books was usually a little under type height, the difference being made up with underlays of paper. The tympan of the press also usually needed some overlaying to get good colour from a block, even with the spongy impression of the hand-

press period; J. M. Papillon, a French wood engraver of the eighteenth century, tried to overcome problems of impression by cutting different parts of his blocks to different heights.² Blocks cut on the plank could if necessary be as large as paper and presses would allow, but end-grain blocks of box, which might exceptionally measure 25 × 25 cm., were in practice seldom available with a side exceeding 15 cm.; the normal procedure was to fasten several pieces of end-grain wood together to make one large block. A special form of woodcut initial, common from the mid sixteenth to the mid eighteenth century, was the *factotum*, a square ornamental block with a hole through the middle into which a piece of type could be wedged, one block thus serving for any initial letter.

The design was cut by hand on the surface of the block with a knife or a graver (a pointed chisel which was pushed along the surface), the parts that were to remain white on the printed paper being cut away and those that were to print black being left standing. Two approaches were possible. One, which gave a positive result and which was much the commoner during the hand-press period, was to cut out large areas of white with a gouge and to leave the design standing as thin lines of black, like a drawing in pen and ink, tones being indicated by groups of closely-spaced lines. Very delicate results were obtained with positive side-grain blocks in the sixteenth century, the chief limitation being inadequacies of ink and presswork. The other, negative, approach was to engrave the design on the block so that it would print as a pattern of white lines on a black ground; its advantages were the greater ease with which fine lines could be cut and the possibility of indicating tones by cross-hatching or dotting. It was so difficult, however, to get good impressions of extensive areas of black with the wooden hand-press that negative wood-engravings were very rarely cut between the early sixteenth century and the Bewick revival of the 1790s; and even Bewick's blocks were badly printed until the coming of the iron hand-presses in the 1800s.

The design for a woodcut, which was probably the work of a specialist other than the block cutter,³ was either drawn in reverse directly on to the block, or traced on to it from paper. If an existing print was to be copied it might be pasted on to the new block as a guide, although in this case the design on the new block would be in reverse. Mistakes made in cutting were mended either by altering the design to accommodate them, or by cutting or drilling out small parts of the block and replacing them with new wood. Patches of this sort could also be used to emend an old block.

¹ See the bibliography p. 399.

^{1a} The French block-makers of the eighteenth century were less incompetent than most, but there too copperplates were used for the finest work.

² Papillon, J. M., *Traité historique et pratique de la gravure en bois*, Paris 1766, ii, pp. 26, 45-57.

³ At least as far as illustrations were concerned. Plantin's designers were paid less than his block-cutters, however eminent they might be as artists; Voet, L., *The golden compasses*, ii.

The earliest blocks appear to have been printed with water-based inks, the paper being simply burnished on to the block by hand; and similar techniques continued to be used for proofing blocks. Blocks in books were inked and printed in just the same way as type, make-ready sometimes being limited to underlays. The life of a block depended on how often and how hard it was used, but if proper care was taken it could last a very long time. Plantin's blocks, which were replaced in the forme after printing with pieces of plain wood so that they should not be damaged at the rinsing trough,⁴ are still preserved in good order at Antwerp.

Cuts in fifteenth- and early-sixteenth-century books were sometimes coloured by hand, apparently being intended for this treatment.⁵ Colour printing from several blocks, another early development, was mostly confined to separate prints, and remained very rare in printed books. The earliest printers experimented with the simultaneous printing of several interlocked colour blocks, but later the individual colours were printed separately, like red type.

INTAGLIO PLATES

A design engraved on the surface of a plate of polished copper can be printed if the lines of the design are filled with ink, the rest of the surface being wiped clean, and damp paper is pressed hard on to the surface so that it lifts the ink out of the engraved lines. The technique of engraving the plate is similar to that of cutting a negative wood block, allowing the use of very fine lines and cross-hatched tones, but it gives a positive not a negative result. These advantages caused printers from the later sixteenth century to prefer plates to blocks for their better-quality bookwork, in spite of the need to print plates apart from type.

It is possible to make prints from copperplates by burnishing paper on to them by hand, and the earliest plates appear to have been printed in this way. But rubbing is laborious and slow, and the full potential of the copperplate process could not be reached in the absence of a special press. When and where the copperplate rolling-press was invented is unknown, but it was certainly in use in the Low Countries by the later sixteenth century, and there was a tradition that it was brought to England from Antwerp early in the seventeenth century.⁶

The rolling press consisted essentially of a frame in which two large

rollers were mounted one above the other, and were turned by means of four large spokes radiating from the axle of the upper one. The copperplate was warmed, inked with a dabber and wiped to clean the unengraved areas, and laid on a board together with the damp printing paper between a pair of thin felts. Then board, plate, and all were passed between the rollers, the pressman hauling on the spokes. As the rollers were forced apart, great pressure was exerted on the narrow strip of contact that moved across the plate—the reader may be reminded of the domestic wringer—far more pressure per square centimetre, in fact, than could be produced by the flat platen of the common press. Its effect may be seen in the 'plate mark' that surrounds an engraving, where a ridge of paper has been forced down over the edge of the plate.

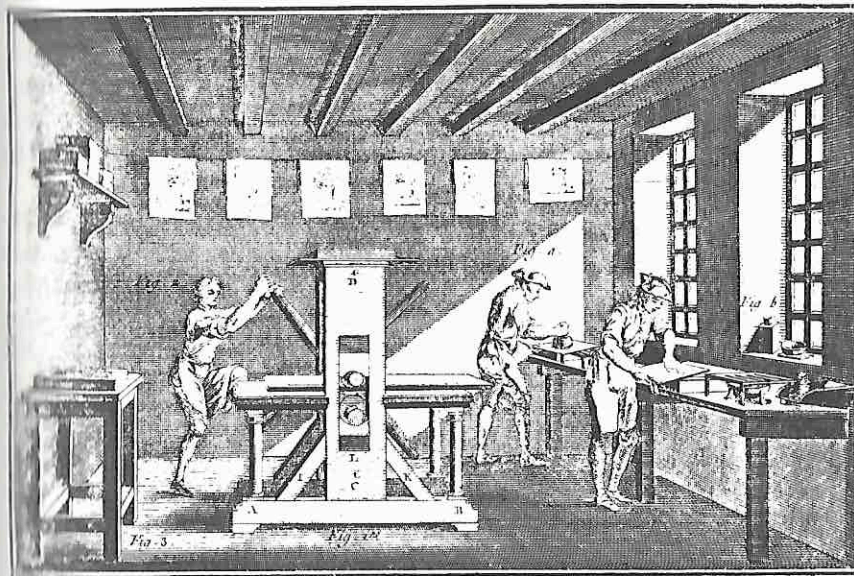


FIG. 69. Copperplate printing in the mid eighteenth century. A plate (warmed, inked, and covered with damp paper) is pulled through the rolling press, while other plates are prepared for printing, probably alternately with the first one. A row of new-made prints hangs on a line to dry. (*Encyclopédie*, planches vii, Paris 1769, 'Imprimerie en taille-douce', pl. 1.)

A few letterpress printers owned rolling presses, but copperplate printers were generally specialists.⁷ Plates for insertion in a book as separate leaves were added when the sheets were gathered in the warehouse, but ordinary sheets that were to be embellished with copperplates were sent out to the

⁷ Although the Plantinian house owned a rolling press in the later sixteenth century, most plates were sent out for printing by specialist copperplate printers; Voet, L., *op. cit.*

⁴ Information from Professor J. Gerritsen.

⁵ Some of Plantin's grander illustrated books were coloured by hand for individual customers; Voet, L., *op. cit.*

⁶ Voet, L., *op. cit.*; Timperley, C. H., *A dictionary of printers and printing*, London 1839, p. 276. The rolling press may well have been known by the mid sixteenth century, even in England (STC 11714-18).

plate printer, usually after the letterpress was printed but before gathering. Sometimes plates were added at a later stage: copies of Robert Masters's *History of Corpus Christi College, Cambridge*, survive in quires just as they were delivered to the College from the Cambridge University Press in 1753; they include the folding frontispiece but not the other six plates intended for insertion, or any of the thirty-five plates that were to be printed on the ordinary sheets.

The simplest—and, for books, much the commonest—method of making copperplates was *engraving*. The surface of the plate was given a thin ground (or coating) of wax, on to which a drawing was burnished or traced from paper. The lines of the design were then cut into the copper, through the wax, with a graver. The burrs ploughed up by the graver were scraped smooth, the remaining wax was removed and the plate was ready for use. Any mistakes could be scraped or burnished away, and the plate hammered flat again for re-engraving; the same method was used for emendation. Like woodcuts, copperplates were capable of giving several thousand impressions, but the lines would get gradually fainter as the surface was squeezed and worn in the rolling press; sometimes a worn plate would be touched up with a graver.

Other methods of making plates were occasionally used for book illustration, although none so commonly as engraving. *Drypoint* (from the late fifteenth century): the design was sketched directly on to the plate with a steel point, the burr being left alone. *Etching* (from about 1500): the design was cut in a wax ground so that, when the plate was immersed in acid, the furrows allowed the acid to bite into the copper, making grooves that would hold ink. *Mezzotint* (mostly English, from the mid seventeenth century): parts of the plate were toned by roughening it with a serrated rocker, the tone then being graded by burnishing. *Stipple* (from the mid eighteenth century): a method of toning which combined etched and engraved dots. *Aquatint* (from 1768): gradations of tone were produced on the plate by the progressive etching through and stopping out of a porous ground, usually made by allowing a solution of resin in spirit to dry out and craze on the surface of the plate. *Colour plates*, laboriously produced in the hand-press period by a combination of differential inking of the plate and hand-colouring of the print, rarely appeared in books.

Changes of artistic fashion in the style of prints cannot concern us here. Style may have some importance, nevertheless, in the investigation of book illustrations, and W. M. Ivins's *Prints and visual communication* (New York 1969) explains such things as the development of conventional methods of indicating tone.

Whatever process was employed, the cost of providing a book with a

substantial set of illustrations was always considerable, and plates were especially expensive. The cost of making and printing the copperplates for some of the finely illustrated editions of the seventeenth and eighteenth centuries equalled all the other production costs for the rest of the book, paper included.⁸

Sets of plates for bibles and other standard texts were not necessarily specific to particular editions in the seventeenth and eighteenth centuries, but might appear over considerable periods of time, not only in the successive editions of a publishing series but also in editions of different publishing series. It is not usually clear whether such sets were supplied with the book in sheets or whether they were offered as an extra by the bookseller/binder.⁹

⁸ Moretus's expenditure on illustrations in 1600-10 was equal to about 25 per cent of his printing-house wage bill; Voet, L., op. cit.

⁹ See p. 147, n. 4.