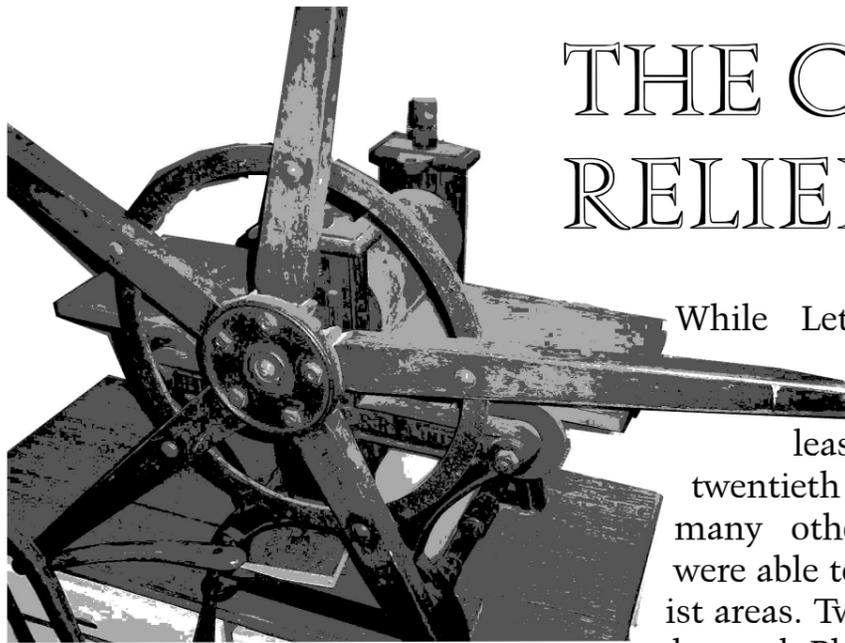


THE OTHER PRINTING PROCESSES: 1

RELIEF & INTAGLIO



While Letterpress dominated printing from its invention until at least the middle of the twentieth century, there were many other processes which were able to compete in specialist areas. Two of these, Lithography and Photogravure, grew to

become major processes that have taken over much of the industry. Many of the others died away as new technologies evolved, or their markets changed.

The processes are divided into four basic principles: Relief, Intaglio, Planographic, & Stencil, although some newer computer-based systems, such as ink-jet, fit none of these categories and are not considered here in detail. The division between printing & copying has become much less clear in the last few decades: Small-quantity production methods are usually considered as copying rather than printing, though the division has never been precise & many minor or transient processes could be seen in either category.

Relief systems print from ink applied to a raised surface to form the image. Letterpress is the most important version, but there are others:

Flexography – Variation on letterpress using rubber moulded printing plates & solvent-based inks. This process produces a marginally poorer print, but suits fast high-volume work. Used for printing plastic bags & sheets.

Foil Blocking – Variation on letterpress using heated printing surface & gold leaf or plastic-mounted aluminium foil instead of ink. Originally done by hand (using gold) in bookbinding but now done on special presses using foil for many purposes: greetings cards, book jackets, and many other promotional items. The gold would adhere naturally, but the foil is coated

with a powdered resin and the printing surface heated to glue it to the printed surface. Lead type could be used, but wears quickly due to the heat, and special brass type was made: nowadays etched metal plates are normally used.

Intaglio systems print from ink stored in recesses in the printing surface.

Copperplate Engravings & *Etchings* are possibly the best-known examples. In the former the illustration is cut into the copper sheet, and in the latter it is etched using acid, usually by painting the copper with a resist, then scratching a design through this coating and putting the plate into a bath of acid. The ink is then put onto the copper plate and the surface wiped clean, leaving ink only in the recesses. The print is made by passing the plate and paper through a pair of rollers like an old mangle. (An example of a hand press is shown above.) Neither was used for high-volume printing, though engraving was used for fine-quality small-run jobs.

Photogravure is the industrial variation on this, using a copper-plated cylinder (which can be several feet long), and putting the image on by using a photosensitive coating which hardens on exposure, and allows the acid to etch where not hardened. (See the description of photoengraving.) In this case, a grid of fine lines (about 8 per mm) is left un-etched over the whole surface, leaving the image as fine holes of varying depth over the surface. The cylinder revolves in a trough of liquid ink, and a blade scrapes off the ink excess as it turned. The resulting image on the paper is of fine dots, which spread slightly as the ink sinks into the paper. The process is used to print large quantity glossy magazines & catalogues as it produces high volumes of work of high quality and the cylinders are hard wearing.

Diestamping on the other hand is a very slow and therefore low-volume process. The image is produced as a recess in a metal block, and a corresponding raised image is also made. The two are then stamped into the paper from opposite sides, with the ink in the recessed image, as in copperplate. This process was used for fine detail, short-run, high quality work, such as business cards, invitations, letterheads & the cloth inserts in jewellery cases.