Printing Processes

ALFRED STIEGLITZ

and the Nineteenth Century
The earliest commonly used method for printing photographic images on paper, salt prints were employed by the Scottish duo of Hill and Adamson in the 1840s. To make a salt print, an artist would coat the paper by hand with a saturated solution of salt water, then sensitize it with silver nitrate before exposing it in sunlight in direct contact with the negative. Because the sensitized solution saturates the paper fibers rather than resting on the surface, the final image appears soft and matte.

The albumen process was introduced in 1850 and employed through the early 1900s. The process uses a thin layer of albumen (egg white) as a binder and silver salts as the light-sensitive chemicals, allowing for a crisp, glossy image. Factory-coated albumen papers were commercially available, supplied by a large industry that grew to meet the enormous demand for the product. Gold toning enhanced their durability while lending a rich, often purple color, as seen in Julia Margaret Cameron’s portraits.

The earliest method of reproducing photographs in ink, photogravures peaked in popularity at the turn of the 20th century. The production of a photogravure required a negative the size of the desired print, which was used to expose a sheet of gelatin-coated paper or tissue. This was transferred to a copper plate and acted as a resist material while the plate was washed in acid baths of various strengths, eating away at the metal’s exposed portions. As with an etching, the clean etched plate was then inked and printed on paper. Offering rich midtones and soft blacks, the photogravure was prized by many members of the Photo-Secession and was the preferred medium for the images Stieglitz included in Camera Work.

Introduced in the mid-1850s, carbon prints are the result of a transfer process. First, a sheet of paper or tissue was coated with a light-sensitive layer of pigment suspended in gelatin, which hardened when exposed to light. After a development in warm water, dissolving the unhardened material, the remaining pigmented gelatin was transferred onto another paper support, creating the final positive image. Photographers admired the process for its stability, its deep tones, and the soft, drawing-like quality of the carbon pigment.
**Gum Bichromate Print**
Although employed largely by Pictorialist photographers between the 1890s and the 1930s, gum printing was invented in the 1850s. To make a print, practitioners brushed sensitized gum arabic mixed with pigment onto paper, then exposed the sheet to light through a negative in direct contact, hardening the gum. Washing in warm water removed unexposed portions while also softening the gum, allowing it to be manipulated; printing could be repeated multiple times with different pigments. The resulting prints are surprisingly painterly, as seen in Steichen’s self-portrait.

**Platinum Print**
Patented in 1873 in England, the platinum printing process enjoyed widespread use between 1880 and 1916. For these prints, a light-sensitive solution of platinum and iron was coated directly onto paper and exposed under a negative. As with salt prints, the sensitized solution saturated the paper fibers, giving the photograph a soft, matte look. Platinum printing practically disappeared during World War I, when an embargo on the metal set prices soaring and made its use for photography unpractical. Many members of Stieglitz’s circle valued platinum prints for their remarkable tonal range and crisp detail; Frederick Evans’s images of cathedrals represent a high point for the process.

**Gelatin Silver Print**
After being introduced in the 1870s, gelatin silver printing grew to dominate amateur and professional photography for a century. Commercially produced, gelatin silver paper contains a layer of silver salts suspended in gelatin above the paper, and over the years versions with a variety of surfaces and contrast ranges have been made available. Gelatin silver prints are recognized for their crisp blacks and whites and the sharpness of their images. Between about 1920 and the late 1930s, Stieglitz revisited many of his old negatives and reprinted them as gelatin silver prints, giving these earlier works a modern feel.

**Palladium Print**
At the start of World War I, a shortage of platinum forced photographers to look for metals that produced a similar appearance, and palladium became a satisfactory alternative. As with the platinum process, palladium prints are made by coating the light-sensitive solution directly on to the paper, resulting in a matte surface. Palladium boasts a wide variation of hue, from neutral black to warm brown, as well as an extensive range from light to dark. Stieglitz printed his portraits of Georgia O’Keeffe using palladium.