THE COLLOTYPE PROCESS

Source: *The Practice of Collotype*, Thomas A. Wilson, American Photographic Publishing Co., 1935

The collotype process is based upon the principle that a film of gelatine impregnated with a bichromate, after being acted upon by light and dampening, will receive greasy ink only on those parts which have been affected by light. A brief description of the process is as follows: A glass plate or a sheet of celluloid or metal is coated with a substratum containing sodium silicate, or other binding agent, then coated with a solution of gelatine containing a bichromate, and dried at a steady temperature in a light-proof oven. When dry, the film is sensitive to light, and wherever light acts upon it, it will become more or less insoluble. When exposed under a photographic negative, the opaque portions of the negative, the highlights, block out all light and permit those portions of the collotype emulsion to remain completely soluble. The transparent portions of the negative, the shadows, permit all of the light to strike the plate and harden the emulsion completely through to the glass base. The medium tones of the negative permit the hardening of the emulsion according to their densities. After exposure and when the unaltered bichromate is being washed out, the different parts of the collotype emulsion absorb water according to the degree of exposure they have received. The emulsion swells laterally, and when being dried the surface breaks up into minute reticulations, or wrinkles, which vary in their water retaining qualities according to the depth of the exposure to light. When the plate is thoroughly dry, it is flowed over with a solution of glycerine and water and permitted to absorb all of this solution the gelatine will hold. It is then drained, blotted of surface moisture, and rolled up with a greasy ink and printed in a press. The ink adheres to the dry edges of the reticulations and other completely insolublized portions of the plate, the center, or bubble, of each reticulation and the completely soluble portions being filled with moisture and refusing the greasy ink.