JOEL SNYDER

The standardization of materials and processes to increase speed in production and lower costs has restricted the range of the modern photographer's possibilities in comparison to what they were at the beginning of this century.

In February 1966, Joel Snyder, discontented with these limitations, began a program of research with a study of the gum process and printed some of his negatives by this method. This led him into investigations of the platinotype, the carbon ~~process~~ print, kallitype, and other obsolete ~~methods~~ processes which are represented in the present exhibition, the first public showing of Joel Snyder's work.

Born in Brooklyn, New York, in 1940, Joel Snyder attended the University of Chicago from 1957 through 1961. Since 1964 he has continued ~~work on~~ Ph. D. studies in philosophy and at present is working on a doctoral dissertation. This is in addition to his activity as a free lance photographer, engaged in portraiture and advertising work. Last year he lectured at George Eastman House on the gum process and in May of this year gave a lecture demonstration on obsolete photographic processes in the class studying the history of photography in the school of The Art Institute of Chicago. He is preparing monographs for The Smithsonian Institution and continuing work on a Smithsonian grant-in-aid. An exhibition of his prints will be held in the fall of this year at The Smithsonian. His photographs are in the permanent collections of The Smithsonian Institute and George Eastman House.

THE PLATINOTYPE

The Platinotype, platinum print, was called the "photographic process par excellence" by Stieglitz. The process is unmatched in its ability to record all the tones buried in a negative.

In principles the Platinotype process is quite simple. A solution of iron salts and platinum salts is applied to a suitable paper support. The paper is then exposed under a negative and developed in a solution of potassium oxalate. The platinum salts used in the process ~~is~~ not light sensitive. The iron salts react to the exposure of light; when they dissolve in the developer, they reduce the platinum salts to pure platinum. The blacks and grays in a Platinotype are pure platinum, while the white is the paper support that has received no exposure of light.

The color of a Platinotype can be varied by adding a number of chemicals to the developing solutions. The detail in the print can be made either precise or approximate through the selection of a fine grained or rough textured paper.

Platinum paper was produced commercially until the time of the First World War, when the price of platinum made further production impossible. Today the cost of five grams of platinum is $ 40.00.

KALLITYPE

When the cost of platinum made the price of platinotype paper excessive, many photographers began to search for a cheaper substitute. The Kallitype was hailed as the solution of the problem. While the kallitype is cheaper than a platinum print, it unfortunately cannot match the platinum print for tone, delicacy of rendition, or ease of manipulation. It is, however, a beautiful process in its own right and can be varied to give numerous shades of blacks, browns, greys and purples.

Like the platinum process, the kallitype process depends upon the light sensitivity of iron salts. A mixture of iron salts, silver nitrate, sour salt (citric acid) and other mild organic acids is coated on a sheet of specially prepared paper. After exposure under a negative, the print is placed in a developing solution made of silver salts and weak organic acids. The exposed iron salts convert the silver salts of the developer to pure silver. The print is then washed, fixed, and dried.

GUM BICHROMATE

A solution of pure gum arabic (a water soluble pigment) and potassium bichromate is carefully painted upon a sheet of paper and allowed to dry. The sheet is then exposed under a negative and placed in water to "develop". Although gum arabic is ordinarily soluble in water, the addition of potassium bichromate to the gum and consequent exposure to light make the mixture insoluble. In practice, the negative placed on a sheet of coated gum paper allows light to pass through its transparent areas and holds the light back in its opaque parts. When the exposed paper is placed in water, the areas receiving no light dissolve away, carrying the pigment away from the paper, while those receiving light remain behind in proportion to the amount of light they have received. The gum that remains holds the pigment that has been mixed with the initial solution.

The gum process is probably the most maligned of all photographic print processes. It became quite popular during the 90's of the last century owing to the ease with which a gum print can be manipulated while wet. Since the gum and pigment that remain behind after development are easily disturbed, the printer can literally paint away unwanted areas and leave the impression of brush strokes behind. Moreover, by choosing an appropriately wide-textured paper as a base, he can produce "artistic effects" through the progressive elimination of middle tones in the print. Most gum printers took great liberties with this. The so-called "straight" photographers of the early years of this century frowned upon the manipulation of prints. As a result, this led to the confusion of the gum print with the highly manipulated print. This prejudice against manipulation has become so permanent that it has grown into total ignorance of the process so that contemporary historians of photography have enshrined the mistaken belief that it is impossible to make a clear, full toned gum print.

THE WOTHLEYTYPE

The British Patent Office lists patents for more than 300 photographic print processes that were registered between 1850 and 1862. Many photographers devoted themselves to intensive research along with their camera work. One easy way to gain fame was to create a developer that possessed "brisk and clarifying energy". But, to gain immortality, a photographer had to invent a print process.

The Wothleytype is one of the few print processes invented during this period of great activity that deserved to survive. Because of the great number of print processes that were competing for attention, it failed to gain many practitioners.

The Wothleytype is made by dissolving silver nitrate, ammonium nitrate and uranium nitrate in collodion (a volatile and fast drying syrupy mixture). Since the nitrates of silver and ammonium are not soluble in collodion, they must first be dissolved in water to which an equal volume of alcohol is added. The prepared collodion is then spread very thinly on specially prepared paper and allowed to dry. Next, the paper is exposed under a negative until the print shows fully. The print is immersed in a toning solution of gold chloride which brings out the red color. Finally, it is fixed in ordinary photographic fixer, dried, and mounted.

Like all black and white photographs of today, the image of the Wothleytype is not in the paper, but in the emulsion, on top of the paper.

CALOTYPE

Calotype was originally the process for making paper negatives in the camera. Its great importance in the history of photography is that it led to the discovery that positive prints could be made from negatives and ~~the use of~~ calotype printing papers were used by photographers until the turn of the century. William Henry Fox Talbot, the inventor of the positive-negative system of photography patented it in 1841. He suggested the following method for making calotype paper:

> 240 parts of wine are added to 75 parts of table salt and 1,000 parts parts of water. This solution is added to the whites of 15 fairly sized eggs and the combination beaten until frothy. The mixture is allowed to remain for three days and then filtered through a a piece of clean flannel. Good writing paper is floated on top of this solution and allowed to soak for about five minutes. The paper is then withdrawn and dried.
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> When the paper is to be used, it is floated on top of a solution made by adding 10 parts of silver nitrate to 100 parts of water. The paper is then dried by the fire and placed under a negative.

(double) The exposed paper is washed in water for three minutes and then toned in a solution of ~~gold~~ chloride. The print is then fixed in ordinary photographic fixer.

FERRO-PRUSSATE

Sir John Herschel, a pioneer in photographic chemistry, discovered that iron salts [illegible] exposed to light and placed in a solution of potassium ferricyanide turn a deep Prussian blue. Herschel applied a mixture of iron salts and ferricyanide to paper, exposed the paper under a negative and developed it in water. The result was a ferro-prussate print, or blueprint. There are more than one thousande kinds of blueprints, of which many are still in use.

Prints made by the Ferro-Prussate process cannot duplicate all the tones in a negative. Consequently the process has always been combined with other processes when it has been used to make photographic prints. The most common mixture was the Ferro-Prussate and Platinotype processes. Prints were made by preparing a sheet of Ferro-Prussate paper, then exposing, developing, and drying it. The paper was then sensitized with Platinotype solution, exposed, developed, and dried. The resulting print has a full scale of tones and yet maintains the characteristic inky blue color of the Ferro-Prussate process.