

PHOTOGRAVURE

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Photogravure by Henry R. Blaney

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HENRY R. BLANEY

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BY
HENRY R. BLANEY.

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INTRODUCTION.

ABOUT the year 1820 Nicéphore Niepce made the discovery that bitumen, under certain conditions, was sensitive to light. He dissolved it in oil of lavender, and spread a thin layer of the solution thus obtained upon stone. This he exposed under a drawing (making the paper transparent by waxing), and after sufficient exposure, oil of lavender was poured on. Those portions of the bitumen which had been exposed to the action of the light had become insoluble, and so remained while the lines which had been protected by the drawing were dissolved away. By treating the stone with an acid these lines were bitten or eroded, and could be printed from. Niepce afterward employed metal plates instead of the stone.

Here we have the foundation for a number of printing processes of the present day, including photogravure.

For many years, however, progress in processes for intaglio printing was very slow. In 1852 Talbot introduced a process termed photoglyphy, and in 1854 Paul Pretsch, of Vienna, patented a process which he termed photogalvanography. In 1870 the late Walter B. Woodbury, inventor of the Woodburytype process, suggested to M. Rousselon, of M. M. Goupil & Co.,* a process which he had discovered, and which he describes † as follows:

“The method, as perhaps many of your readers know, is based on the fact that some pigments used in carbon

* Now Boussod, Valadon et Cie.

† *British Journal Almanac*, 1874.

printing have an unpleasant habit of granulating when mixed with gelatine and bichromate, destructive to their use in carbon printing and Woodburytype, but bearing the essence of success in an engraving process where grain is necessary. The origin of this method was simply owing to my getting some bad reliefs, in which this effect was first noticed. Out of this arose the photo-engraving process which, as I said before, is now claimed as the invention of a Frenchman. But I am digressing.

This relief, possessing a suitable grain, could, by hydraulic pressure, be made to transfer its minutest details to metal without any loss to fineness, so giving a plate possessing all the properties of a mezzotint. The methods hitherto used of electrotyping would have proved useless, as all detail would have been lost. The same thing applies to the new method I am now about to bring before your readers. The latter process of getting the grain transferred to a hard metal remains the same; but the novelty is in the method of producing the grained plate. To those who have practiced the process of enameling, as used by Geymet and Alker, and others, my description will be better understood.

"I first coat a thin, polished steel plate (zinc will answer) with a very thin coating of gum, glucose, and bichromate as used for enameling. This I dry rapidly, and, while still warm and desiccated, expose under a glass positive. On removal from the frame after exposure the plate is made to take up a slight amount of moisture by breathing on it.

"During this stage I brush or dust over it any hard powder, such as emery, powdered glass, etc., but these I keep of different degrees of fineness or coarseness. No. 1, is of a coarse quality, and is used first; No. 2 is finer; and No. 3 is of the finest grain obtainable. These are obtained by passing through muslin of different degrees of fineness. Having in the first stage of moisture used the No. 1, or coarsest,

powder, after a time No. 2 is dusted over and adheres to the middle tints, while the very finest tones, which have almost lost their sticky qualities by the exposure to light, are treated to No. 3.

"Now we possess a granular picture having all the true qualities required in a photo-engraved plate, or, rather, such as will give a reverse in metal having these qualities. The steel or zinc plate is then to be exposed to light to completely harden the mixture all over, and is then treated exactly as in my other engraving process; that is, pressed into soft metal by hydraulic pressure, electrotyped, and then the surface is aciercised or coated with steel. The dark parts are thus represented by a coarse grain, the middle tints by a medium grain, and the finest shades by the most infinitesimal particles, thus meeting all requirements necessary to a successful photo engraving process."

This process was taken up by a Frenchman and claimed by him as his own invention. The chief difficulty with it was that the plates before being perfect require the work of a skillful engraver, sometimes for weeks. They were therefore very costly, six dollars per square inch being charged for the making of the plate alone.

Klic's process, 1886, was the next important improvement in photogravure or intaglio printing, and since then many other processes and improvements have been introduced by Obernetter, Waterhouse, Colls, Zuccato, Sawyer and others.

In the following chapters Mr. H. R. Blaney gives a working description of the process as practiced to-day by many of the leading firms in this and other countries. This originally appeared in the columns of *THE PHOTOGRAPHIC TIMES*, but I have made many additions that I have imagined may be of value to the student. A dividing line will be found between Mr. Blaney's writings and my own additions.

THE EDITOR.