

in printing a negative, through even very thin glass used as a support for the sensitized pigment, the sharpness would be very much impaired.

Glass, however, offers such very great advantages, by reason of its perfect transparency and its cheapness, that it seemed very desirable to overcome this difficulty, and I succeeded in doing so perfectly. I found that by the device which I adopted I could print a portrait through a piece of plate glass upon a carbon surface so sharply that every hair was visible. This was done by using reflected sunlight—a species of illumination which, though occasionally used in the negative process (for copying Daguerreotypes) has, I believe, never before been used for positive printing, and certainly not for the purpose here proposed, and for which it answers equally well.

The best mode of proceeding is to place the frame holding the negative and the pigmented glass against the wall, beside a window at which the sun enters. Then let a mirror be placed so that the rays fall upon it almost perpendicularly, and are reflected full upon the frame. The sensitiveness of the bichromate is so much greater than that of silver paper that even in this light four or five minutes' exposure are sufficient with an easy-printing negative.

After printing, all that is necessary is simply to wash off the superfluous pigment, and the picture is finished. It is an exceedingly easy process, as will naturally appear from my description, and, what is no small matter in these days, can be practised by any one without infringing existing patents.

Transparencies printed in this way may be looked at through the glass, and thus are non-reversed. The method is, of course, not applicable to printing on opal glass, for the support must be transparent.

I cannot doubt that, with the aid of this plan of using reflected sunlight, modes will be found of working upon transparent paper, such as will give good results. All pictures on pigment, made without transferring, must in every case be reversed. If it is necessary to avoid this difficulty, the negative itself must be either reversed by taking it on the back of the glass in the camera, or, if made in the ordinary way, this mode of printing by reflected sunlight will enable the negative to be printed through its own glass, provided the latter is free from flaws and defects.

Obviously, however, the most useful application of this idea is to the printing upon thin plate glass, in the manner first above mentioned. Connected with this, a few words remain to be said as to the best method of preparing the glass for printing.

Of course the sensitive mixture can be poured out upon the glass. Mr. Swan, I believe, prepares all his "tissue" originally upon glass, and transfers it to paper.* But as this operation requires a special manipulation not immediately acquired, it will be found simpler to purchase the pigmented paper, and apply it to the glass. And here a difficulty will be found. The "tissue" must of course be sensitized. If dipped into the bichromate solution and applied to the glass, it will be found wholly impossible to get rid of the small air-bubbles which form between the pigment and the glass. To avoid this, put the glass first into the pan of bichromate solution, then the pigmented paper, pigment side down. Let it remain for the proper time (two or three minutes), and then lift the glass with the tissue upon it. There is not the slightest difficulty in doing this without being troubled by the appearance of a single bubble.

It is not necessary to remove the paper; it is, in fact, better to leave it on. After exposure, plunge into cold water, and after a few minutes peel off the paper. Finish with water as warm as may be found necessary.—*Philadelphia Photographer.*

* This is a mistake. Mr. Swan prepares the paper with the pigmented gelatine direct: the paper, in an endless band, being made to pass, by the revolution of the rollers on which it is stretched, repeatedly over the surface of the gelatine preparation.—*Ed. PHOTO. NEWS.*

THEORETICAL AND PRACTICAL PHOTOGRAPHY.

BY HOMER FELLOWS.*

THEORY and practice are two separate and distinct principles, as opposite as the day-dreaming thinker and the busy, bustling workman; and yet they are conjoined, for the workman often alters and adapts the dreams and theories of the thinker, for his own practical purposes, that would otherwise be lost for general benefit.

This philosophical fact is evolved and proved by the consideration of two of the most important subjects that affect the photographic craft at the present time.

There is a wide-spread desire among thinking photographers to class the photographic art with the fine arts, and there is a universal wish to check the depreciation in the value of photographic labour which seems occasionally to overrun us, affrighting the timid and carrying dismay to all. The frequent reference to these two subjects in the columns of the journals is the best proof of their importance; but whether the art can be classed and considered as one of the fine arts by the practical photographer who engages in the business for a livelihood, or will be judged to be a mechanical business, to be carried on by rule and line, as it too frequently is, will probably remain an open subject for debate for some time to come, notwithstanding the frequent expositions that may be made on the subject.

Those who are engaged in photographic work, that ever dwell upon the subject, will probably believe that beauty and grace in position, or softness of shading, is wasted upon the awkward Hibernian whose early education has been much neglected, and unless his hands are posed directly to the front, with no crook nor subsidence in either shoulder, the work will probably be rejected as bad; and the soft shadows, scarcely perceptible, and prized so highly for their delicacy, will be greeted with the remark, "Be jabbers! and my face is not dirty!" On the other hand, customers of taste and judgment may require all the finest display of a man's artistic ability, and bring forth hidden genius as fully as sculpture or painting on canvas; but the photographer who considers all who enter his gallery with money in purse as "grist to his mill," whether Teutonic, Hibernian, or Italian, will find, in the endeavour to satisfy and gratify his customers, that the theory of photography as a fine art will give way to the endeavour to please his customers, and photography as a fine art suffers.

Notwithstanding this, photography is one of the fine arts. From the amateur or photographer who is able to say, "Sit as I place you, and be content," great conceptions of the beauty of the human form and face may be evolved; his own capability will be developed, and the inspirations of genius may be evoked, but it will be at the expense of a photographic business. The business man pleases his customers, the artist pleases himself.

One cannot but envy those whose lot it is to photograph nature in the open fields, among the whispering trees, near the laughing brooks, where beauty may be viewed in manifold aspects, and where they may choose their own with none to gainsay its truth, for God made it. There the artist may luxuriate, feeding his mind, and ever gaining grander and nobler thoughts from the contemplation of the Creator's magnificent handiwork.

But the commercial value of one's work, how shall that be regulated? By what process shall one receive a just compensation for the combined labour of body and mind that is undergone by the photographic art-student? Theory has it that a grand combination may be made of the craft, setting a value upon each and every style of picture made, and thus securing to all that equal proportion of profits which each thinks himself entitled to. But practical experience proves that there are always "black sheep," who wait until prices are regularly established, and then suddenly announce, "Card photographs, \$1.50 per dozen!" "Whole-sized photographs for \$1.00!" to say nothing of those extraordinary persons who offer four, twelve, sixteen, and even fifty gem pictures for twenty-five cents; and thereupon ensues a rush to their galleries, and their neighbours, sick with envy, commence to lower their prices, until it is a hurly-burly scramble who shall make pictures at the lowest figure, without regard to quality or cost. Yet for this who can name a remedy? Human nature will always be

* *The Philadelphia Photographer.*