

knows well that it is here that he must give his best attention if he desires uniformity in his daily results. Let the printing bath be always of uniform strength and the due proportion of acetate of soda and gold in the toning bath and you will rarely, if ever, get into trouble. You know at once what reduction will take place in your print, just as though you saw it finished and dry before you; but let irregularity creep into the formula, and your day's work will certainly be more or less a failure. The rules regulating the sensitizing and toning baths must be rigidly observed, and to carelessness in this respect may be attributed the majority of printing failures and general want of uniformity in results. To keep the silver bath in workable strength, a stock solution of silver, eighty grains to the ounce of water, should be kept in readiness to the hand of the sensitizer, and one ounce of this solution added to every five sheets sensitized, care being taken to agitate the dish so as to equalize the strength of the solution.

Toning.—For toning the print I believe the ordinary acetate bath is the best, giving, as it does, such beautiful warm tones, and which I myself am partial to. When the prints are taken from the printing-frame they should be well washed in three or four changes of water, and lastly in water containing a handful of salt.

Toning Bath.

Chloride of gold	1 grain
Acetate of soda	35 grains
Carbonate of soda	5 "
Water	8 ounce

A convenient form of stock solution to add to the toning bath (as it loses energy) is as follows:—

Chloride of gold	15 grains
Acetate of soda	2 drachms
Water	1 ounce.

A portion of the solution, regulated by the daily average of sheets of paper toned, should be added to the bath after the day's toning is done; it will then be in good condition for the next use. It will however, always be found wise to have two or three baths in use, and work them alternately.

The prints when taken from the toning bath should be again placed in water containing a little salt and afterwards well and carefully washed in several changes of water.

Fixing.—For fixing I believe a strong hyposulphite bath is the best, not less than four ounces to the pint of water, care being taken to neutralize with carbonate of soda or ammonia. For washing, the best plan in my opinion is to wash a comparatively short time and have a boy constantly turning the prints over during that period, first turning them all face up, and then going through the whole batch again and turning them in a contrary direction, and so on.

The "Topic" for next week will be, "On Lighting the Model," by Lydell Sawyer.

FRENCH CORRESPONDENCE.

NEW METHOD OF TINTING PHOTOGRAPHS—NEW METHOD FOR ACCURACY IN DETERMINING THE LENGTH OF EXPOSURE—NEW EDITION OF M. VIDAL'S WORK ON CALCULATING THE LENGTH OF EXPOSURE—INSTANTANEOUS SHUTTERS FOR PHOTOGRAPHY OUT OF DOORS.

New Method of Tinting Photographs.—M. Kurtz has just taken out a patent for a process for colouring photographic prints, a process which might be styled printing in powdered colours. I do not know how far this plan of applying flat tints to drawings or photographic impressions may be successful in practice, but I confess I have grave doubts on the subject, more especially when it is a question of depositing on a photographic surface a number of different colours. Of course, any process may be patented, and there is, consequently, no reason for being astonished at a manu-

facturer having devised the plan I am now about to describe, however strange it may appear at first sight. A box, surmounted by a bellows, admits at its upper side the print which is to be coloured. The bellows, by means of a bent tube, directs the air into a hopper containing the powdered colouring material at the bottom of the box. When the bellows is put into action, the current of air produced blows up the powder from the bottom of the hopper, where it lies in a heap; the heavier particles immediately fall back again, while the lighter ones float in the form of an impalpable dust in the interior of the box, and cause in the upper portion of it a sort of mist, which is only slowly deposited. At this moment the print to be coloured is introduced by a side opening, and of course must be kept quite flat. The powder, in subsiding, deposits a more or less light tint on the parts of the print not protected by paper shades or screens cut out to the outlines of the picture. So soon as one tint is fixed the shades are changed; the first powder employed is removed from the apparatus, and one of another colour is substituted. The bellows is then again made to act, the print is again inserted, and so on until all the tints which it is desired should be used have been deposited. According to M. Kurtz, by no other method can perfectly flat tints be so quickly and easily laid on a print or drawing; they can also be fixed with ease by any of the known fixing processes. What, however, is a great stumbling block with me in accepting this process at the high value which the inventor places on it, is my inability to credit the opinion he expresses. I cannot believe that it is so easy as he says to remove completely from the box all the particles of one powder before introducing another; it may be possible, but it must necessarily take a long time. How, again, does he arrive at measuring the degree of intensity of a colour, whose transparency, of course, varies with the quantity or thickness of the powder deposited? It may be that I exaggerate also the difficulty of cutting out and fitting the paper screens so as exactly to cover the part which it is intended to protect, and to prevent the powder from penetrating into the region of another colour. But I repeat, before expressing a definite opinion, it will be necessary to see the process in action, and if I have laid more stress than is necessary on the doubts that I feel, it is because this method may contain the germ of an invention to produce the same effect in a more certain and scientific way.

The Necessity for Estimating with Accuracy the Length of Exposure.—The further we advance with the employment of highly sensitive films, as are those of gelatino-bromide of silver, the more it becomes necessary to possess a means of judging the length of exposure required with sufficiently approximate accuracy. More especially is this necessary when working in the open air, or we run the risk of returning to the developing room with a number of plates either over or under-exposed. During the holidays, which I have been passing in the South of France, I have experimented with a number of gelatine plates coming from various sources, and I have felt the utter impossibility of getting any good result without being able to fix the length of exposure, depending as it does on so many different factors—the luminous intensity, the focal distance, the diameter of the diaphragm aperture, and, above all, the sensitiveness of the plate. There is room for guessing when it is a question of minutes, but none at all when the exposure may not extend beyond one, two, or at most, three seconds. It must not be forgotten how liable we are to prolong the exposure to twice or even three times as much as is necessary. Then when the result is a failure, we lay the blame on the plates or on the developer, but never on our own inaccuracy. What is still worse is that this want of success leads to discouragement, and we are tempted to kick photography over altogether. Now, it is so easy to provide oneself with a means of measuring the time of exposure that I cannot understand why so few photographers take advantage of it. Can there be any