Photographic Notes

COMBINED TONING AND FIXING BATH FOR P. O. P.

Mr. W. K. Burton recommends the following formula :

Add a pinch of chalk to neutralise. The prints are placed in this without washing, when they turn yellowish-red, then red, and finally brown. If removed while red, the color on drying will be purple-brown. If brown the final color is nearly black, the whites are pure, and there is no loss of half-tones. It is well to note that this solution is not a permanent one.-- Chemist and Druggist.

FORMALIN IN PHOTOGRAPHY,

On half immersing a finis' ed negative in 40 per cent. formalin solution, Dr. F. D. Skeel found that the portion immersed became slightly opalescent, but cleared perfectly after being a short time in cold water. The portion of the film so acted upon did not swell in the water to the same extent as the other half. Subsequent experiments with soft gelatin in sheets showed that, after treatment with formalin, it became insoluble in boiling water, while remaining transparent. It was also noticed, however, that on softening the gelatin in cold water before immersing in the formalin solution it remained partially soluble in boiling water.---Photography.

HOW LONG CAN UNDEVELOPED PLATES BE KEPT.

At a recent meeting of the Photographic Society of Great Britain, Mr. C. H. Bothamley described some experiments in the development of plates between two and three years after exposure. They were exposed in 1890-91, and not developed until 1893. Some were packed back to face, others film to film, wrapped in white tissue and brown paper, kept in a reasonably dry place, away from the products of the combustion of gas. The negatives obtained wore all just as good as if the plates had been exposed the day they were developed. Mr. Bothamley, therefore, believes that, in a properly prepared plate, the latent image is, to all intents and purposes, permanent.

POSITIVES IN THE CAMERA.

First make your negative in the usual way, then dip it in solution of boric acid (21 grains in 2 oz.) until the image changes from black to red. Then work it in three changes of a solution made by mixing 2 drachms saturated solution of chrome alum and 1 drachm of the borieacid solution with $12\frac{1}{2}$ ozs. of water, Then place the plate for a short time in the following solution :

Bichromat	te of potash	5088.
Nitrie aci		
Water	solution of curon	ieanum. 5uss.

Next, immerse in a solution containing 1

grain each of caustic potash and bromide of potassium in an ounce of water until the red image disappears. It is then washed thoroughly and exposed for about thirty seconds to day-light, or from five to ten minutes to a gas flame, after which it is re-developed with a weak paramidophenol or eikonogen developer, a positive being the result .- Chemist and Druggist.

PHOIOGRAHING IN COLORS.

Knowledge is responsible for the statement that beautiful and accurate photographs of the solar spectrum have recently been obtained in France by the im-proved process of M. Lumiere. The essential principle of this process is as follows :- A sensitive film is spread on a glass plate in the usual manner, and the plate is laid, sensitized face downward, on Upon exposure, the rays of mercury. light fall upon the film, penetrato it, and striking the surface of the mercury are reflected back through the film. The reflected vibrations meet the direct rays, and thus an interference is set up, so that at intervals there is a neutralization and intensification of the vibrations. In the first case (neutralization) there are, of course, no photographic effects, while in the latter, these attain their maximum. On developing, therefore, the part of the film acted upon by light of any color, is found to be stratified, as it were, the strata being at a distance from each other of half the length of the light-wave of the color in question ; and, consequently, when viewed by reflected light, they produce the same color by interference. It is rather curious that the discoverer of this process is named Light (lumicre).

WHEN TO STOP DEVELOPING.

Mr. Alfred Watkins, gives useful data for calculating when to stop developing :--Pour on the developer as the hand of your watch points to an even minute and note down the time with pencil. Allow the sky and high lights to come up, but the moment the half-tones or the grass in a landscape negative make their first appearance out of the creamy plate, note down the time. The difference between this time and that of pouring on the developer is the " time of appearance," and this multiplied by the multiplying factor gives the total time to develop.

The following gives some idea of the multiplying factor to be used, but with different workers it will vary, and also with different brands of plates .

1.7.LO+AVIT (Ler pyrotooz.)) 4	lines	"time of	appearance'
	2 " ")) 1		••	
- " (1 24		**	••
Hydroquin	one (any strengt	h)5		••	••
Ekonogen	(any strength)	4	44	••	••
Metol (any	strength)	18			•
Amidol (2 ;	r. to or.	10	••		

Motol must be used with bromide (about 4 gr. to the ounce), or the time of appearance will be inconveniently short for observation. The strong point of the method is that the "time of appearance" makes the correct allowance for almost all the variations usually met with in practical work .- Amateur Photographer.

NEW DEVELOPMENT OF CHLORIDE-PAPER.

One of the latest ideas for the treatment of argentic chloride, paper has or-iginated with Mr. W. J. Wilson, F.C.S., of the Paget Prize Plate Company, Watford, and there has been quite a rage about it at the photographic societies. This is a little difficult to understand, for the process can scarcely be considered free from trouble, but the advantages are undoubtedly tempting to the professional man. Substantially the new process con-sists in converting the silver chloride of the gelatine film into silver bromide, then developing the paper.

The first operation after printing in the ordinary way is to immerse the print, before washing, in a 10 per-cent. solution of potassium bromide - AgBr is formed. With freshly-made paper bromising is complete in one or two minutes, but with old paper the immersion may be continued for from five to ten minutes. The film does not suffer from prolonged immersion which only renders the paper a little more tender to hundle, but has the advantage of softening the film. Care must be taken that if more than one print is put in the bromide-bath at a time, " each should be immersed and thoroughly wetted before the next is laid down." Špecial care is also needed to remove all air-bubbles, as they will if left, owing to the fact of the bromide not doing its work, cause dark spots in development. After removal from the bromide bath, the prints are washed for three minutes in running water, and are then ready for development.

Mr. Wilson's formulæ for developing are as follows :

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Hydroquinona Kaz.
Sulphurous acid I oz
Sodium sulphite Foz
Potassium bromide
Water to
SOLUTION II.
Canstie sola 104.
Sodium sulphite i oz
Water to
SOLUTION III.
Bromide of ammonium 1 oz.
Carbonate of ammonium . 1 oz.
Distilled water

Equal parts of the above solutions are to be used.

With this mixture the prints are to be developed as in treating bromide prints. The time when development should be stopped is a matter of some consequence. In practice it is found that there is a tendency to over-develop. The image when developed out is of a yellow or pale orange tint, and does not seem to have the strength that it will have when subjected to the after-process of toning. The operation of development should be stopped as soon as the finest details begin to show. Upon taking the print out of the developing-bath it should be placed in running water, and the washing may be sufficient in the case of a single print ; but if a batch of prints are being manipulated, it is best to rinse each one in wat-

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