



Amateur Photography

Developing

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THE development of the latent image is one of the most beautiful experiments which modern science has revealed, and one which cannot fail to fascinate those who witness the process for the first time. To those who wish to obtain the most enjoyment from their chosen hobby we would strongly recommend the development of their own negatives. It has been truly said that if the exposure of the plate has been correct their development can be successfully accomplished by the merest novice.

For those who photograph a variety of subjects which require varying exposures, the Burroughes Wellcome's exposure calculator and notebook is indispensable. It can be obtained for thirty cents, and deals fully with the difficult subject of exposure. I have used this method on many occasions, and have never wasted a picture when the exposure has been based on its calculations.

Plate and film pack development can only be carried out in the non-actinic light of the dark room, for although the plate has been exposed to light in the camera, and has received therein the image cast upon it by the lens, it is still as sensitive to white light as before, and the slightest exposure to such would totally obliterate the image.

For our purpose we shall require developing solution, fixing solution, three dishes and a four-oz. graduated measure, a ruby lamp (or one containing both ruby and yellow glasses is the best), illuminant for our dark room, which is usually an ordinary cupboard commandeered for the purpose.

Developers can be had in solution, powder or tablet form. The latter are very useful for those who require a fresh solution infrequently, and for those who prefer to mix their own the following formula will be found very efficient and simple in practice:—

Metal	35 grains.
Sodium Sulphite	2 oz.
Hydrokinone	50 grains.
Sodium Carbonate	1½ oz.
Water	20 oz.

This is mixed with equal parts of water at the time of use. For instance to develop a ¼ plate, one oz. of the developer is diluted with one oz. of water.

The pyro formulae is the one usually employed by professionals and experienced workers.

A.	
Pyro	1 oz.
Potass. Metabisulphite	1 oz.
Water to make	9 oz.

B.	
Potass. Bromide	1 oz.
Distilled water to make	9 oz.

C.	
Potass. Bromide	1 oz.
Water to make	9 oz.

To make a nominal developer take A. 20 minims, B. 10 minims, C. 30 minims and water to 1 oz.

To develop.—Place the three dishes on the table, remove the plate from the plate holder and place it film uppermost in one of the dishes. Pour on to the plate plain cold water and rock the dish for about thirty seconds. Then pour the water off, and the developer which has been prepared previously, and is ready to hand in a measure glass, is poured over the surface of the plate in a steady sweep, so that the entire surface is covered as quickly as possible, otherwise markings will result. Rock the dish gently so that the developer is kept in motion over its surface. After a time the image will be seen gradually appearing on the light surface of the film, and later the entire picture will come up in negative form, that is to say the light portions, such as the sky, appear black, whilst the shadow portions remain white.

Development should be prolonged until the image is all out, and the surface is practically black all over. Examination of the back will then show a trace of the image. When this stage has been reached the plate is again rinsed in water and placed in the fixing bath (composed of Hyposulphite of Soda, 4 oz.; water 20 oz.), when the white portions of the film will be dissolved out, leaving clear glass in the shadows and the high lights in dark, well graduated patches.

Fixing should be complete in about ten to fifteen minutes. The plate is again well washed in repeated changes of water for half an hour, when it may be put on one side in a current of air to dry.

A more scientific and exact procedure is that devised by Mr. Watkins, and known as the

Factorial or time system, which is based on observing the time elapsing between the immersion of the plate in the developer and the first appearance of the image. It is claimed for this method that a higher percentage of successful negatives can be obtained than would be possible by the ordinary system, that, amongst other advantages, it overcomes the difficulty of ascertaining when development is complete, that it greatly lessens the chance of light fog occurring, that if the plates are either under-exposed or over-exposed, it gets as much out of them in either case as is possible by any other, possibly more difficult, method, and with infinitely less trouble and risk; and that, with correct exposures, it gives uniform and reliable results.

Briefly stated, the method consists in noting the time which elapses between the first application of the developer and the appearance of the image, and multiplying that time by the developing number or factor of the particular developer employed. Development is continued for the specified time, and the plate is then washed, fixed, and washed as before stated. When using the above method it is advisable to only expose the plate to the dark room light long enough to note the appearance of the image, and then cover up the dish for the remainder of development. It is necessary to keep the solution in gentle motion by slightly rocking the dish from time to time, because if this is not done a curious mottling will

appear on the negative which no after treatment will remove.

Roll films may be developed in several ways. Each exposure may be cut off and developed either singly or several together in a dish, though this latter method is not recommended for the novice. The entire roll of six or more exposures may be developed in the strip by the following method:—

A deep porcelain dish is filled with developer, and the film, held by the two ends, is passed slowly through it with a see-sawing motion until development is complete. A clip should be attached to each end of the film to prevent handling it. The up-and-down movement must be continuous and complete, so that the entire length of film is subjected to an even and continuous action of the developer.

Fixing Roll Film.—This requires particular attention. To simply drop the films in a large dish of fixing solution and leave them there will most certainly result in the spoiling of a certain proportion of the negatives. Some of the films will only be partially submerged, and others will probably have air spaces imprisoned beneath them, which will prevent the fixing solution from reaching the film. In either case imperfect fixation will occur and markings produced as the result.

The fixing bath for film should be composed of Hypo, 6 oz.; water, 20 oz. A gem jar filled with this solution makes an excellent receptacle for fixing roll films, but care should be taken to see that the film is at least an inch below the surface of the fluid.

"No sublimer picture has ever been painted than that of earth giving its best to heaven. Is there any better than the youth of our land?"

"Coming up from the great unknown, with winsome faces they are on tip-toe, wondering what kind of a word this is, and on the mothers in the church rests a large measure of the responsibility of determining the atmosphere in which they are to live."

"Like the x in Algebra, they have infinite possibilities, and it means much to the young person to get started right. It means infinitely more to save the whole life for Christ, to give the strength and beauty of youth, the vigor of the best years, the maturity of manhood and womanhood and the ripeness of old age, rather than the fag-end of a worn-out life. "Give God the best."

—MRS. A. M. PHILLIPS.