

DEVELOPING AND DEVELOPERS

[CONTINUED]

By L. W. BROWNELL

FOR many years the most universally used developer has been one in which the principal ingredient is pyrogallic acid, and this, despite the fact of the large number of developing agents that have of late years been placed upon the market, is still, in the hands of one who knows how to use it properly the best all-around developer.

Its one fault is its liability to stain, not only the plates, but the fingers of the operator and anything else with which it comes in contact, and these stains are impossible to remove. With careful manipulation, however, the marks need not appear on the negative for they are caused by too strong or too warm developer, or by prolonged forcing of the development.

Right here it is well to say that a plate that has been under-exposed can never be remedied by forcing the development. The developer will bring out what there is in the negative, but beyond this it cannot go, and the only result of trying to force out more detail by prolonging the development will be either a stained or a chemically-fogged plate, or both.

In the hands of one accustomed to its use, pyro can be made to produce any quality of negative desired, and it is not difficult to acquire this necessary knowledge, but it must be by practice.

The following is an excellent formula: Solution B, sulphite of soda, 1 oz. Use 1-2 oz.; bromide of ammonia, 30 grains; citric acid, 1 dram; pyrogallic acid, 1 oz. Solution B, sulphite of soda, 1 oz.; carbonate of potash, 3 oz.; water, 10 oz. Use 1 dram of each solution to 2 oz. of water. It is well never to use this developer for more than two or three plates, as it weakens and discolors from repeated use and is more liable to stain. It is cheaper, in the end, to throw it away as soon as it commences to work slowly, and mix fresh, but the two stock solutions, if kept well corked, will last indefinitely.

Of all the many developers, most of which are products of coal tar, that have been placed upon the market in the past few years, metol is undoubtedly the best. It gives a soft negative, full of fine detail and delicate half tones. Is a developer that is easy to work and rapid in its action. In fact, its rapidity of action is one of its chief faults, as it gives less time for careful following of the development.

For portrait work it is, in my opinion, unexcelled, and the following formula I have found to give most excellent results: Water, 10 oz.; metol, 75 grains; sulphite of soda (crystals), 1 oz.; carbonate of soda (crystals), 1 oz. use one part of this solution to three of water and add, if necessary, a few drops of a ten-per-cent. solution of bromide of potassium.

For landscapes and general photography in which sharpness of detail and brilliancy

is desired, the following formula will probably be found better than the above: Water, 25 oz.; metol, 60 grains; hydrokinone, 60 grains; sulphite of soda, 2 oz.; carbonate of soda, 1-2 oz. Use one part of this solution to from two to four of water, according to whether you wish for a weak or a strong negative.

Any of the foregoing formulas can be used for tank development, but must be diluted with from twenty to thirty times the amount of water ordinarily used. For those who are sure of the exposures they have given their negatives, I should always advise this method of development as giving the most uniform and even results in the least possible time, that is, of course, when there are a number of negatives to be developed.

When starting to develop a number of negatives when we are uncertain whether they have been correctly exposed, it is always the best plan to have two graduates of developer mixed, one ordinary strength and the other about one-third strength, that is with three times the amount of water.

Start development with the weaker solution and watch carefully how the image appears. If it comes up quickly and with a flat, hazy appearance, then the plate has been over-exposed, and the weak developer must be poured off and the stronger one used, with the addition of fifteen or twenty drops of the bromide solution. Development under these conditions should be carried beyond the point where it would ordinarily stopped in order to bring out all the details, and the negative reduced afterward if too dense. On the other hand, if the image comes up very slowly and in spots, it has been under-exposed and then the developer must be weakened still more by adding an ounce or two more of water and no bromide. By this means all the detail that is in the negative can be brought out and it can be strengthened afterwards by intensification. If the image seems to be coming up exactly as it should, and it should appear in from one-half to one minute (one soon learns to tell as quickly as the image appears whether or not it has been correctly exposed), then the weak developer can be poured off and the ordinary strength used, with the addition of no bromide, until the desired density is reached.

A negative should be thin enough to enable one to read print through any part of it, and it should print on silver paper in about five or six minutes in the sunlight. Negatives should always be well fixed and washed thoroughly, or else they will stain in time. They should be left in the fixing bath for at least several minutes after they have been, apparently, perfectly fixed, and should be washed in running water at least three-quarters of an hour.