AMATEUR PHOTOGRAPHY

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DEVELOPING AND DEVELOPERS.

Development is a science. That is the right word; it is a genuine science, though the average amateur does not appear to realize it. Yet it is easily proved to him. All that is necessary is to take one of his own badly developed negatives and let him compare it with the production of some competent worker. As a rule, he imagines that all that is necessary to do is to drop his plates in a bath composed of certain ingredients (and he most likely does not know what they are), and then when the image comes out on it strong enough to print, take it out and fix it. Such a simple little process! Really, there can be no excuse for all this talk about mixing "Bromide of Brains" with the solutions. Why, even a child could do it, and that's no jest—the way he does it.

Surely the amateur who uses one brand of plates and then developes with the formula that is supplied with the production of another maker, cannot be aware of the fact that, notwithstanding all the different formulæ published, even the sample pyro and soda, there is no single developer that will develop all plates at their best, nor, in fact, any two makes. The proportions in which one solution is mixed will fully answer the requirements of the plate for which it is intended, and yet, perchance, may mean utter ruin to another plate of equal sensitiveness. Of course it will produce a negative, almost any developer will do that. But it won't give you just what you are looking for—the best that is to be had. In order that you may be assisted in realizing how true this is by having a conception of the various formulæ on the market, the following list compiled from the formulæ issued by the various plate manufacturers, is given. The figures given therein indicate the number of grains in one ounce of diluted developer:

	Sulphite of Soda.	Sal Soda.	Pyrogallic Acid.
Monroe	19	9½	2½
Stanley	18	18	3
Cramer	18	9	2½
Eastman	15	10	2½
Seed	18	12	3
Hammer	12	6	1½
Climax	18	18	3
American	24	12	2½

Observe, there are not two alike. In one, for instance, we find there is used 24 grains of Sulphite to the ounce, while in another there is but twelve, only half that amount. One uses eighteen grains of sal soda and another only one-third of that. The pyro ranges from one and a half to three grains to the ounce. Now, what is the cause of all this difference? There must be some reason. Well, the reason is to be found in the fact that there are no two manufacturers using the same emulsion. Some of them employ potassium bromide, others use ammonium bromide, together with iodides of both kinds. In those instances where the same ingredients are used, they are most likely mixed in widely varying proportions, and, as a consequence of this, the different brands of plates each have a distinctive color and quality, which will only yield the best results to the developer that is compounded in proportions carefully mixed to suit it. While all are aiming at the same result, i.e., a perfect negative, each sets about producing it in different ways.

The most important agent bearing on the development is the exposure. Successful workers always expose to suit the developer and steer clear of that error of developing to suit the exposure. By this it is meant that they use a *normal* developer, and, in order that it may be successfully manipulated, expose correctly. All directions give methods of rectifying incorrect exposures by varying the proportions in which the developer is mixed, but it is well to bear in mind that old adage about an *ounce of prevention being worth a pound of cure*.

Mistakes, however, will occur, and then it is necessary to find some way of remedying the evil. Perhaps in out of doors work, most common cause of complaint is over-exposure. Here, if the trouble is only very slight, it is possible to get along by simply using an old pyro developer. Pyro, you know, once it has been used, takes up a certain amount of bromide from the plate, which acts as a restrainer. The adding of a ten per cent. solution of bromide of potassium to the developer as a restrainer is unnecessary to comment upon. But in cases where the trouble is excessive it may be necessary to adopt more emphatic means to make anything out of the plate. Personally, I would advise that you go back and take it over again if you are able. But there are often cases where it is impossible to do this. Your directions will tell you in what quantities to mix your solutions to serve here and you may try it. If that is not sufficient, the following solution is excellent for all purposes where great density of the high lights and clear glass in the shadows are required. Though intended for the copying of pen drawings and engravings, my personal experience is that it is *par excellence* for the developing of badly over-exposed plates. Here it is:

I

Distilled, or ice water	25	oz.
Sulphite of soda crystals	5	oz.
Hydrochinone	¼	oz.
Bromide of potassium	½	oz.

II

Water	25	oz.
Carbonate of soda crystals	6	oz.

Mix parts one and two in equal parts for use. The negative should then be put through an alum bath to prevent heating from frilling it and afterwards dried near a stove. It is surprising how a negative dried near the heat will gain in intensity.

It is not necessary to give an intensifying or reducing formula here. Every maker does that, and besides so many other good ones are published that it would only be a waste of space.

Also, it ought to be unnecessary to say that an undertimed plate should be treated with a fresher developer. Every one knows that. If this does not make the image appear satisfactorily, take the plate out, and, without rinsing, place it in a tray containing water, to which has been added a little alkaline solution (sulphite and carbonate of soda), and leave it there as long as it increases in detail. If it is not then strong enough the development may be continued in fresh developer, and if that does not bring out what you want, you may as well throw the plate away and go and take it over again.

It would seem that amateurs do not sufficiently understand the effect of different chemicals or the duties which they are intended to perform. Without a clear knowledge of this point, they are in the dark as to what they are doing. It is not the right way to do a thing to simply set about it by rule with-