

Photographic Notes

Some Recent Advances in Photographic Chemistry.

(Concluded from last month.)

There is only one other matter that I will refer to at present, and that but briefly, namely, the getting rid of the hyposulphite from the negative. Experience appears to indicate that if a negative is of a satisfactory density, the small amount of hyposulphite left in it after from two to four hours' washing does no harm. But if the negative is to be intensified, any hyposulphite will cause a precipitate of mercury salt and so give a false deposit. This would, as a rule, matter but little but for the fact that a gelatin negative is always difficult to wash evenly, and such a false deposit will, therefore, almost always occur in patches. If the gelatin film is of exactly the same thickness throughout, equal washing all over is difficult, but in most plates there are variations in the thickness of the film that make it impossible, unless it is so prolonged as to be practically perfect in the thickest parts. What we want is a reagent that will oxidise the small residue of hyposulphite into sulphate, which is quite inert, without affecting the image or attacking the gelatine. I do not know of any reagent that will do this. Peroxide of hydrogen, as described, appears to be excellent, the general idea being that it produces sodium sulphate and sulphuric acid from the remaining hyposulphite, but this is a mistake. It produces no acid, and only about one-third of the sulphur is oxidised to sulphate. By mixing sodium hyposulphite with a large excess of the peroxide, and allowing them to remain together for three days, less than half the sulphur was changed to sulphate, and whatever change had been produced it was of little, if any, use, for the solution still gave a precipitate with mercuric chloride. Peroxide of hydrogen appears, therefore, to be of no avail; but even if it were, it would be a very unsafe reagent in the hands of ordinary photographers, because its strength is very liable to decline. It may in a few months be only one-tenth of its original strength, and a bottle, freshly opened, though originally without doubt of full strength, may be found to contain only a third of the stated quantity; and these changes lead to no alteration in the appearance of the liquid, and can only be recognized by a direct test. These uncertainties render it of very little use in the hands of those who are unable to determine its strength. Alum and acids decompose sodium hyposulphite, but a mixture of alum and hydrochloric acid acts very slowly upon a weak solution of it, so slowly that one might be tempted to say that it also was useless. I find, however, that a fairly well washed negative is made more fit for intensification by treating it with an acid solution or an acidified alum solution, and washing

again, and I fancy that the improvement is not due merely to the extra washing that it gets. Whatever may be the actual change brought about by this treatment, I find that it is advantageous from a practical point of view, and that it is a desirable precaution to take.—*Phar. J. and Trans.*

A Clean and Economical Pyro Developer.

A demonstration given before the Society of Amateur Photographers of New York.

A. Moreno, of the Society, developed a number of plates, some exposed by him and some by other members of the Society, using a Pyro developer compounded as follows:

- No. 1. Saturated solution of sulphite of soda.
- No. 2. Saturated solution of carbonate of soda.
- No. 3. Saturated solution of sulphite of soda, 6 oz.; dry pyro, 2 oz.

For a normal developer take

- No. 1.....8 oz.
- No. 2.....4 oz.
- No. 3.....2 oz.

Mr. Moreno said that he had used this developer for the last six years developing with it from fifty to one hundred plates every day, and that it was the cleanest and most economical developer he had ever used. It will keep for a long time and even the developer which has been used will keep and should be preserved. This old developer is best for over exposed plates, and, if that is not sufficient, more of the pyro solution, No. 3, should be added. For a plate having a very short exposure he used less of the pyro solution and more of No. 2, the carbonate of soda solution. For normal exposures the developer works best when equal parts of old and new developer are mixed. Bromide of ammonia or potash can be used, but in that case the developer will not keep and should be thrown away. With a little practice, however, the operator has entire control of the development without the use of a bromide. Mr. Moreno said that since he had been using this developer he had never had occasion to employ a bromide as a restrainer.

The plates developed before the Society were first immersed in a developer that had been used; if they did not come up as rapidly as Mr. Moreno wished they were put in a tray containing fresh developer and afterwards returned to the old developer to acquire density. The plates developed very quickly and made fine soft negatives with plenty of detail and sufficient density.—*Can. Photo. J.*

Developer for Flash-light Negatives.

One of the best English photographers uses the following solution for developing flash-light exposures. With this formula were made some of the celebrated exhibition pictures which were so much admired at the late joint exhibition. It will be

noticed that there is some considerable modification of the developer as used for normal exposures:

- A—Pyrogallie acid (Sehering) .. 1 ounce
- Bromide ammonium 4 ounces
- or
- Bromide of potassium 3 ounces
- Water 7 ounces
- B—Ammonia..... 1 ounce
- Water 40 ounces
- C—Ammonia..... 1 ounce
- Water 20 ounces

To develop, take equal parts of B and C, which will, in ordinary cases, ensure a soft and well-graduated negative, although different proportions of B and C will be required for under-exposed plates, or for subjects introducing white draperies, or dead black dresses, etc. The judgment of the operator will, in most cases, tell him what proportions are required, and if the first appearance of the image should prove he has miscalculated, he should not try to improve the solution he is using, but throw it away and commence again with fresh.—*Amer. J. Photo.*

Aristotype Papers in Summer.

The *Amateur Photographer* advises that during the hot weather the prints should before toning be steeped for five minutes in a saturated solution of alum; then after a thorough washing be toned in the following bath:

- Sulpho-cyanide of ammonium .. 5 grams
- Water 100 grams
- Chloride of gold, at 10 for 100 .. 10 c.cm.

When the desired tone is obtained, wash prints slightly before fixing them in

- Hypo 12 parts
- Water 100 parts

The alum solution rapidly becomes turbid by the presence of silver salt contained in the gelatine coating. It should therefore be rejected after about ten prints have been used.

Snowflake Pictures.

Anthony's *Bulletin* says that a Mr. Sigson has photographed snowflakes as follows: A Zeiss microscope, fitted to a long camera, was placed at a considerable angle in the attic of a house, near to the window. To gather the flakes separately, a thick cloth was laid in that part of the window where but few flakes fell. After selecting a flake by the aid of the microscope, it was placed in a net made by gumming cotton thread across a hole cut in a card, this card being placed in position under the microscope. The lighting should be from the side, and should be arranged beforehand, so that half of the field is lighted. With a magnification of 15 times, an exposure of 2 to 5 seconds was found necessary. To prevent the snowflake being melted by the breath of the operator breathing must be carried on through a curved tube.

Valerianate of zinc or ammonia is recommended by Dr. Sidney Ringer for controlling the paroxysms of whooping cough and involuntary movements of children.