

BROMIDE PAPER AND OPALS.

By "RAE."

Bromide paper is the easiest means by which a small hand-camera negative can be made to produce a reasonably-sized picture, and the process is very easy if due precautions are taken. It is beyond the means of the ordinary photographer to make the paper himself, owing to the great difficulty of coating the paper evenly without machinery; but as there are so many excellent makes upon the market, there is no need for this trouble. I shall not go into any detail in connection with the setting up of the enlarging apparatus, as given a lens, it is very simple, and I leave it to the ingenuity of the operator. Needless to say, the paper is exposed for a certain time, depending upon the negative and illumination; generally for a bright sky and large stop and medium negative about five minutes is sufficient. The paper is soaked in plain water until limp. This is to prevent unequal development, due to the cockling of the paper directly it is damped. It is then developed by the following solutions:—

No. 1.

Ferrous sulphate..... 1 lb.
Sulphuric acid..... 1 dr.
Water..... 50 ozs.

No. 2.

Potassium oxalate(neutral) 1 lb.
Ammonium bromide..... 20 grs.
Water..... 64 ozs.

These should both be filtered before using. For use, add 1 oz. of No. 1 to 5 ozs. of No. 2, and not vice versa, or else a dense yellow precipitate will be thrown down. When image is fully developed it is placed in the clearing solution without previous washing:—

Sulphuric acid..... ½ oz.
Water..... 60 ozs.

This should be changed once or twice, allowing the prints to remain in about one minute. They are then

thoroughly washed free from acid and fixed for fifteen minutes in

Hypo..... 1 lb.
Water..... 80 ozs.

The prints are then washed for some hours in running water. Bromide paper cannot be developed by pyro-owing to the staining produced, but eikonogen can be used with very good results. The formula recommended is:—

A.

Sulphite of soda..... 1 ½ ozs.
Eikonogen..... 46 grs.
Water (distilled)..... 20 ozs.

B.

Potassium carbonate..... 2 oz.
Water (distilled)..... 20 oz.

For use, equal parts of A and B; if the picture be slow in coming add more of B. With this developer no-clearing solution is needed, but the prints will be improved by soaking in a solution of common alum before fixing in above bath. Amidol can also be used. The formula given is very rapid:—

Amidol..... 60 grs.
Sodium sulphite..... 1 ½ ozs.
Water..... 7 ozs.

For use take 1 part of above and add 3 parts water; if too rapid the addition of a few drops of potassium bromide (1:10) will slow the development. This solution may be used over and over again and no clearing solution is required. All the above remarks apply equally well to papers and opals, they being prepared with the same emulsion. Care must be taken in handling the surface of either papers or opals, the slightest touch making a black mark which may spread over the surface. Some of these marks disappear during fixation. The slightest trace of hypo in the oxalate developer greatly increases the rapidity of development, and may fog the paper chemically. This suggests a method of accelerating devel-