

THE PHOTOGRAPHIC NEWS.

Vol. VII. No. 244.—May, 8, 1863.

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EXPERIMENT WITH IODIDES AND BROMIDES IN COLLODION.

In conducting experiments all the conditions at every stage of which are well known and familiar, the experimentalist is apt to be guided in his estimate of the result by foregone conclusions. It is well, therefore, sometimes to begin *de novo* without a knowledge of some element in the calculation, so as to reach conclusions without any settled conviction in the mind of what must happen.

A few days ago a manufacturer of collodion sent us three sample bottles to report upon. They were labelled No. 1, No. 2, and No. 3, but no clue of any kind to their special character or preparation was given, beyond the fact that they were especially intended for card portraiture, and that the manufacturer was desirous of having independent testing or verification of his own results before making largely for the public. He felt, therefore, that a report, unbiassed by any possible prepossession, would be best obtained by withholding any details as to haloid salts, and their proportions, present in each.

We proceeded to take a card negative with each, exciting in a nitrate bath in excellent condition, giving us fine results with various samples of collodion we had in use. We used a Dallmeyer's No. 1 B lens, with a stop of about half an inch aperture, giving in each instance, five seconds' exposure in the open air. We developed with a strong solution of saccharo-sulphate of iron. The result of the first trial of each sample, hastily jotted down at the time, but verified by repeated experiments since, was as follows:—No. 1, lights developed quickly, but half-tones appeared tardily; finished image thin, grey, and under-exposed, with fogged shadows, profusion of spots, and comets. No. 2 developed in every way satisfactorily, the image was brilliant, the high lights well picked out, the half-tone delicate, and giving great modelling, shadows clean, the negative sufficiently vigorous, with the first application of the iron solution, to print well without further intensification. No. 3: the result was in many respects similar to those of No. 2; a very soft image, but sufficiently dense to print without further treatment; a little more deposit on the shadows, and the general effect of being a little more done, the sparkling high lights giving force and brilliancy in No. 2, being wanting in No. 3.

On rendering this report to the maker of the collodion, we learnt that in each instance the normal collodion was the same, the sole difference being in the salts used, which were as follows: No. 1 contained $4\frac{1}{2}$ grains of iodide of cadmium in each ounce. No. 2 contained the same quantity of the same iodide, with the addition of one grain of bromide of cadmium. No. 3 contained the same quantity of the same iodide, but in addition $4\frac{1}{2}$ grains of bromide of cadmium to each ounce. The results in his hands had been similar to those in ours, with one interesting difference, illustrating another point: No. 1 in his hands was less sensitive and less satisfactory than the others, but instead of yielding a

thin grey image, it gave a negative with great density and contrast, but without half-tone or harmony. The difference in the experience of each was easily explained. We had used a bath somewhat freely acidified with nitric acid, whilst he had used a neutral bath. The presence of nitric acid in the bath was, in the days of simply iodized collodion, a familiar cause of thin grey negatives, and proved so in this instance. Some subsequent experiments with a neutral bath gave us similar results as to sensitiveness; but whilst with No. 1, the simply iodized sample, we then got rid of the thin grey image, it was still spotty and slow, and yielded less brilliant prints than a negative taken with No. 2 under similar circumstances.

The results thus secured, and the conclusions attained, without the possibility of foregone convictions influencing the decision, confirms in a very satisfactory manner all our established conclusions, the results of numerous carefully conducted experiments several years ago, and repeated at intervals since. For portraiture and general purposes a collodion made from cotton which will dissolve not less than six grains to the ounce of solvents, and containing from a grain to a grain and a half of a bromide, and from four to five grains of an iodide, either cadmium alone, or half cadmium and half an alkaline iodide, we regard as decidedly the most stable and best for iron development, yielding, with short exposure, harmonious and brilliant negatives. For many special purposes a larger proportion of bromine may be permitted, for the general purposes of the portraitist, however, it is unnecessary and sometimes injurious.

THE ENAMEL PHOTOGRAPHIC PAPERS.

As the enamel papers for card portraiture appear likely to excite some interest amongst photographers, it is important to obtain as much information as possible as to their original preparation, the treatment they require, and the qualities they possess. At present the information on the subject is very scanty, owing to the existence of "trade secrets;" we have, however, gleaned a few additional particulars.

There are, so far as we know at present, three distinct manufacturers of the enamel photographic paper all in Germany, namely, Liesegang, Schering, and another whose name we do not at this moment recall. Of the material employed in giving the preparatory enamel surface we only know that employed by Herr Liesegang, the other two houses preserving the matter a secret. Herr Liesegang, himself an able photographer and chemist, knowing the importance to the photographer of having some knowledge of the nature of materials with which he is working, does not withhold the information. The pigment employed in enamelling, he informs us, is oxide of zinc. Referring to the suggestion, in the letter of a correspondent, recently made in our columns, to the effect that his paper was really prepared by Mr. Schering he writes as follows.—

"The paper of which I sent you a specimen was prepared,