

process of substitution by the gold or platonic salts thorough in the entire body of the silver reduced by the action of light, without losing the desirable qualities of the print, the use of the emulsion papers would probably be attended by at least the same amount of permanence possessed by the old style of prints. In the case of the matt collodion papers, printed strong and thoroughly reduced in the platinum bath, we already come near the ideal, so far as permanence in emulsion prints is concerned. But this still leaves the glossy papers out in the cold, so to speak. Some twenty-five years ago I made a series of experiments, part of which were published, I believe, in the *Philadelphia Photographer*, which resulted in a practical method of toning plain salted papers while printing, and completion thereof in the fixing bath by adding from one to two grains of neutral chloride of gold to each ounce of the salting solution, and afterward treating such paper as usual, except omitting the toning. The drawback was that the paper had to be used in a short while after salting, the gold, in time, staining the sizing of the paper. But the print was thoroughly toned through and through, and was unquestionably stronger against the action of deleterious elements. My experiments with albumenized papers, though long continued, were futile, or rather lacked complete success on account of the nature of the compound formed by the mixture of the gold and albumen.

It seems now, however, that someone has succeeded in making a collodio chloride emulsion with the addition of the gold chloride, which is claimed to accomplish the object of toning while printing, as I did with plain salted paper. At least a patent has been taken out for that process. The emulsion is made precisely the same, so far as I can see by the formula, as any other collodio chloride emulsion, the only addition being about one grain of neutral chloride of gold to each ounce of emulsion. It would be worth while for experimenters to test this method thoroughly, for the baryta coating of the paper, which forms the base of the sensitized compound, is not liable to staining by the gold as paper is, nor is collodion such a difficult element to handle in connection with gold as albumen. My experience leads me to believe that if this gives good results in practice, the prints will be far more permanent than those now made, and it will probably give agreeable tones with thorough toning, which the present method does not. The regularity of tone and simplicity of operation would, it seems, become a necessary consequence. To a chemist the action does not seem compatible with the theory of toning as understood by us, but in the case of the plain salted paper the results certainly justified the conclusion that the action is similar. It certainly requires three or four times the amount of gold to a print than our present method, and if that is used entirely in substitution