men, which being in itself alkaline, the addition of the acetic acid gives rise to the development of an acetate, with subsequent formation of acetate of silver on the nitrate bath. This being a very unstable salt, paper which contains it becomes rapidly embrowned in keeping. The dose of salt added to the albumun need not exceed two per cent.

The albuminizing of the paper should be carried on in a dry place, and during dry weather, and the paper itself should be dry before being albuminized: the *eclat* of the proof much depends on this. The paper should not be left on the bath for more than two minutes; if it remains longer, the albumen is liable to run into streaks on drying, and will never have the fine gloss it ought to have; in fact if the albumen does not dry rapidly, and has time to sink into the paper, the proofs will always look dull and faded. The best paper that can be used is that called "papier de Saxe," of which the genuine is imported from Germany; but several of the French manufacturers make a capital imitation of it, which seems nearly, if not quite, to equal the original, and is far cheaper, the real Saxe costing 80fs. the ream, while the imitation may be had for half the money.

It is advisable to keep the paper some time before albuminizing it, as thus many of the little metallic spots disappear by oxidation; but after it is albuminized it cannot be employed too soon, and should be kept in a very dry place; but I have never seen albuminized paper which, even with every precaution did not slightly deteriorate before it had been kept six months. This arises from the fact of the salt disappearing from the surface, where it was at first and becoming imbibed into the web of the paper; so that the sensitive compound of silver forms down in the tissue of the nitrated paper, and the image when printed, being no longer on the surface, does not possess its proper brightness of effect. To sensitize the paper, a solution of nitrate of silver must be made by dissolving that salt in water, in the proportion of 80 or 90 grs. of the former to each ounce of the latter. This solution is to be placed in a convenient dish, and the paper laid face downwards on it, with the usual precautions in order to avoid air-bubbles. The paper should remain on this bath for not less than four minutes, and be then lifted off, drawing it at the same time over a glass rod, which should be held in such a way as to scrape the superfluous liquid from the face of the paper, and cause it to drip back into the dish. Each sheet of paper so sensitized withdraws a portion of silver from the bath; and were more nitrate of silver not added, the bath would soon become too weak. I find in practice that papier de Saxe, prepared with albumen containing two per cent. of salt, requires an addition of one dram of nitrate to the bath for each whole sheet, or parts of a sheet equal to a whole, which has been sensitized on it; and the bath must be filled up with water, so as to bring the bulk of the liquid always up to the same point. Paper when thus sensitized may be hung on a string, by a crooked pin, to dry, or what is better still, suspended in one of the little wooden clips sold for that purpose. After a time it will be found that the bath begins to turn brown and become discoloured; and with a view to correct this, many methods have been proposed, such as the coagulation of the albumen by heat, which in my experience I have found to have no effect, or filtering through animal black, or the addition of kaoline, both of which answer well, but are wasteful and tedious, or the addition of citric acid, which is likewise objectionable, as it soon renders the bath intensely acid, and paper sensitized on it is slow in printing, and has a tendency to turn red, and lastly, the method of Messrs. Girard and Davanne of adding a small portion of solution of common salt, and subsequent filtration, which is the best.

This process I have modified, and I think advantageously so, in the following manner: make a mixture of 3 ounces 5 drachms 2 scruples and 15 grains of crystallized phosphate of soda, with 1 ounce 3 drachms 2 scruples and 15 grains of crystallized carbonate of soda, and pound them together, and keep them in a bottle for use. Of this mixture take two ounces 2 drachms 2 scruples and 5 grains, and dissolve in 3o ounces of distilled water. When it is requisite to decolour a bath which has become coloured by use, all that is necessary is to add some of this solution, in the proportion of one fluidrachm to every pint of the bath. Shake them well up together, and filter, when the liquid will be found to run through quite clear and free from colour. The precipitate and the filter, both of which contain silver, may be added to the other residues, and subsequently worked up again. This treatment slightly impoverishes the nitrate bath; and in order to restore it to its normal state, it becomes necessary to add to it 58 grains of nitrate for every drachm of the solution which has been used. Not only is the bath by this means completely and rapidly decoloured and retained in a neutral condition, but it afterwards never becomes so easily discoloured by albumen.

If prepared paper is meant to be kept some time, it should be placed in a Marion's preservative case; but should the albumen employed have been fresh and the paper of good quality, it will keep perfectly in a dry place for four or five days.

Be careful never to evolve fumes of ammonia or sulphuretted hydrogen in the room where prepared paper is hanging, or it will become discoloured; and for like reason avoid the emanations from stables, &c. &c.

Printing pictures must be regulated by the taste of the operator, only let it be remembered that the strength of the print is always rather diminished during the fixing and toning processes. There have been many and various theories formed on the rationale of the process of printing; the one, however, to which I give the preference is that of Messrs. Girard and Davanne. These gentlemen suppose that when sensitive paper is exposed to the light, and the compound of nitrate and chloride of silver at its surface undergoes decomposition, the cloride of silver becomes reduced to the metallic state with liberation of chlorine, and that this chlorine immediately attacks the free nitrate of silver with which it comes in contract, converting it into fresh chloride of silver, and setting free nitric acid and oxygen. The former is in its turn again decomposed, and more chlorine set free to react as before, while the nitric acid is decomposed in its nascent state by the organic matter of the paper. There is therefore continual decomposition and recomposition going on, till all the free nitrate of silver becomes used up, while successive layers of reduced silver are formed, and super-imposed in the dark parts of the print. In case the sky of a negative has become solarized, which is sometimes unavoidable, it will be necessary