

of a zinc foot-warmer, filled with very hot water; this is placed leaning against the wall and resting on the table so as to present a sloping surface, whereon to place the negative; there is room for two $7\frac{1}{4}$ by $4\frac{1}{2}$ negatives at a time. As soon as one is warmed through, the varnish is poured on, and another plate is then put on the warmer; the plate on which the varnish is poured is well drained, and then again placed on the warmer till quite hard. As soon as the negatives are varnished, the paper for the next day is prepared (I am taking up the operation at four or five in the afternoon at this time of the year). As I lately explained in a letter to these pages, we use three sorts of paper, being one very strong, rich paper for large pictures, and also for those small ones which do not work so well on the weaker papers; another, medium quality, for general use; and yet a third, to use when prints of an exceptionally delicate character are required. These papers are known to us by the names of their makers, but it is not necessary to mention them in this place. Our silver bath consists of—

Nitrate of silver	40 grains
Nitrate of soda	20 ..
Water (not distilled)	1 ounce
Sugar (a little)	<i>à la</i> Bovey.

We have tried the use of the silver bath with gelatine, but without finding much advantage from it; the above is the best formula for a printing bath that I know of for general purposes. Before use it is filtered, and about ten grains of nitrate of silver are added for each sheet prepared the day before; the strength of the bath is thus supposed to be kept up to its original standard. As I sometimes find, however, when using a quantity of weakly-salted paper, we add too much silver in this way, and then the prints begin to assume a more brilliant character, and the relation between the character of the negative and the quality of the paper becomes upset: a negative which would have printed absolutely right on our medium paper would then be too brilliant, and would have to be done on some other paper. I should also mention that we keep up the quantity of the silver solution by adding water, and if there is any reason to suppose that the bath is weaker than usual, we make up its strength, not with plain water, but with fresh silver solution.

The papers being floated on the bath for three minutes, as a rule, or five minutes in the case of very thick Rives, they are hung up to dry by two corners, so as to drain into the filter through which the bath was passed. As soon as another sheet is ready, the first one is removed to another place, and a small piece of blotting-paper is pressed against the drop of silver solution at the lowest corner. This piece of blotting-paper adheres to the sheet, and greatly assists the process of draining; besides, by absorbing the solution, it prevents any mess from its dropping about, and aids in saving the waste. The drying is finished off by the fire, and the sheets are then rolled in tight bundles, each sort by itself. Thus prepared, the paper keeps perfectly till the next day, and even to the second day, but after that it becomes very yellow, and we do not like to use it for any but unimportant work. The sugar does not, in our hands, very much aid in keeping the paper from discolouration, but it is certainly of *some* use, though by no means so much as we should have been led to expect from the very favourable accounts of it which have from time to time appeared in your columns.* The negatives being varnished, and the paper being prepared, the work of the day is so far finished.

Next morning the negatives of the day before are taken up to be named and looked through. The name of each is neatly stuck on the back on a slip of gum paper, and each

* Mr. Cherrill, we think, somewhat overlooks the nature of the service sugar is alleged to yield. It does not prevent a slight discolouration of the paper, but secures a condition in which the discolouration disappears in the fixing bath. This we find to be the general experience, even with paper kept for many weeks.—Ed.

negative is carefully examined, not only as to its intensity, but in order to detect any little defects which may be obviated, or improvements which may be effected.

The printing operations are now proceeded with, and at this time of the year it is necessary to begin early and end early, as the light falls off very soon after the middle of the day.

There are many matters connected with the actual printing which time must compel me to abbreviate as much as possible. For vignettes we always use a simple arrangement, consisting of a hole in a piece of card, and cotton wool placed round it; this, being placed outside the frame, gives at once the most perfect means of securing a good vignette, having the especial advantages of being easily made, great cheapness, and, above all, of being easily adapted to any size or shape picture which may be required. For oval pictures we use the ready cut masks made by Mander; and nothing could be better for the purpose. One thing only is needed more with them: they should be numbered, so as to render it easier to order from them, and to refer to them, when the work is going on. We have found great difficulty in getting the makers of printing-frames to make the backboards fit properly; they generally make them so very tight; it seems to be "pride of the workshop" to make things very accurate, and so one gets punished by frames with backboards made so beautifully that you can hardly open one to look at the progress of the print without being almost certain of disturbing its position on the negative.

When the printing for the day is finished, the prints are looked through, and all extraneous dark edges of paper cut off, to save the gold; they are then immersed rapidly, one by one, in the washing water before toning. As soon as all are in, they are once turned over, and the water is then poured off, the dish again filled, and the prints again turned over; they are then removed to a second dish of clean water, and from this they are transferred, a few at a time, to the toning bath.

On some occasions during the summer we used—when printing large composition pictures, requiring some days' printing in the sun—a little alcohol in the first washing water, and with very good effect; it seemed to aid considerably in restoring the paper to its normal condition after the long-continued baking in the sunshine, and it thereby rendered the toning more certain and easy.

For toning we use the old acetate of soda bath, and until it fails us we do not intend to use any other; it is the most certain of any, and gives better tones than, or at any rate quite as good as, any that can be brought in competition with it. The amount of gold which it uses is not extravagant, but it is somewhat more than is given with some formulæ. One grain of gold will, with our bath, tone two sheets of paper printed dark with massive shadows and but a small quantity of high light, such as are, in character, the pictures of M. Adam-Salomon; but when lighter prints are being made, the amount of work done by one grain of gold is more in proportion. We made our gold solution ourselves, and find it works very much better than any we could buy; it was made from *pure gold* and pure acids, and is a fine rich reddish yellow in solution; it does not as yet show the least tendency to precipitate from the stock solution, which we keep carefully excluded from the light. I have often heard it stated, by men whose experience should lead them to know what they are speaking about, that one grain of gold will tone from five to ten sheets of paper. I believe then it does so in a very improper manner. The object of the gold seems to me not only to be to give a fine colour, but also to make a preservative layer over the silver forming the print, and so to preserve it from the action of evil influences; and, therefore, I think it is especially necessary to use a toning bath which will ensure a thick coating of gold. One grain to a sheet used to be thought a proper proportion, but now some men are called foolish who use more than one-fifth of that quantity. For my own part, I think they are the more honest who look as