

RESTORATION OF OLD FADED PHOTOGRAPHS

by

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During research into radiochemical methods of intensification of photographic films it was found that many old photographic plates available in archives, libraries or private collections, could be restored to their original appearance simply by application of standard photographic processes.

The photographic plates supplied by the Archives Office of NSW were faded glass negatives 70 to 100 years old. The images were set in gelatine emulsions and were entirely or partly bleached to a white-yellowish colour. A few tests showed that the silver compounds forming the image were chemically present in an entirely reducible state and that a photographic or chemical reducer was all that was required to convert the white-yellowish images to dense, black silver.

Published methods of restoration of faded photographs rely on bleaching followed by washing, redevelopment and more washing. Since we have found that bleaching is not necessary, the number of operations required is reduced to a bare minimum which is important because of possible damage to the film.

The old emulsion will not tolerate a multiple sequence of wet operations before it starts to lift off the glass plate. Once this happens the emulsion becomes irreversibly damaged and many creases will be produced upon drying. The strong tendency of the gelatine to lift off the glass plate occurs during the first few minutes after swelling due to wetting. In most cases the process starts at the emulsion's edge from where it rapidly radiates inward. This can also happen at damaged spots in the body of the emulsion, and can be prevented by sealing the edges of the emulsion under a thin layer of collodion which appears to bind the gelatine quite firmly to the glass surface.

The restoration procedure used is as follows:

1. Clean the glass side of the photographic plate with a wet cotton wool plug and avoid any water being spilled on the emulsion.
2. Gently rub the emulsion with a cotton wool plug wetted in alcohol until all dirt and grit is removed. Stroke on one direction only. The alcohol will not wet the emulsion.
3. Paint or preferably immerse the glass edge in a thin collodion solution and make certain that at least $\frac{1}{2}$ cm of the emulsion edge is also covered in collodion. If any large damaged spots exist in the body of the picture carefully touch the edges of the damaged emulsion and underlying glass with

collodion, using a fine brush. As little as possible of the emulsion edge should be affected because once the collodion hardens the developer will no longer penetrate.

4. Immerse the negative in any photographic developer and allow the bleached silver compound to be reduced by the developer to black silver of the intensity desired.
5. Wash in running water until litmus paper brought in contact with the emulsion shows neutral reaction. This may take as little as five minutes. If longer washing is needed the operation must be closely observed. The plate must be removed from the water immediately at the slightest sign of swelling.
6. Dry.

This procedure restored all the old faded glass negatives supplied to us by the Archives Office of NSW. Prints made using one of these plates before and after restoration are shown in Figs 1 and 2. All the plates were restored to a level closely approaching their original condition.

This simple method for restoration of very old photographs should be applicable to many photographs showing an advanced stage of deterioration due to bleaching and hence should prove of value to the National Archives and other similar institutions.

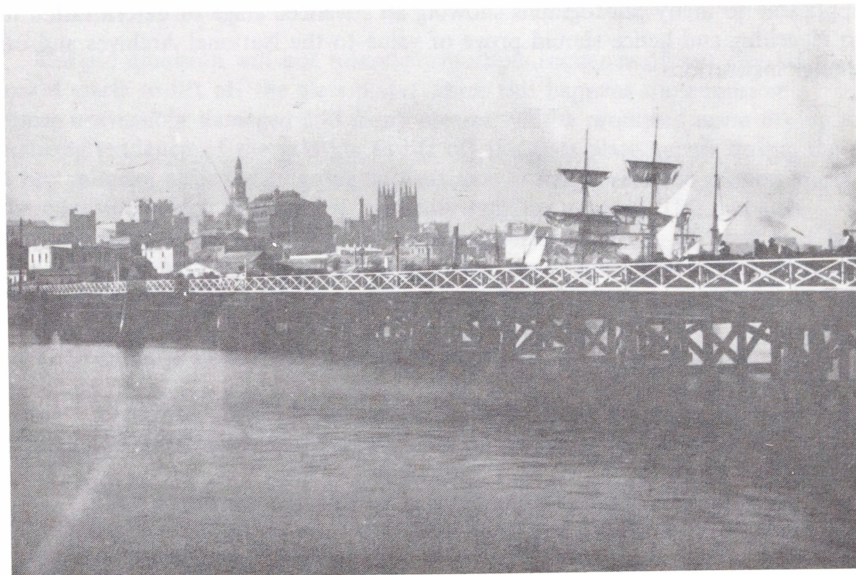


Figure 1. Pyrmont Bridge, c. 1890, from the originals in the Archives Office of New South Wales.
Top – before restoration Bottom – after restoration.



Figure 2. G.P.O. Building, 1894, from the originals in the Archives Office of New South Wales.
Left — before restoration Right — after restoration.