



Article: Annotated Bibliography: 19th Century Articles on Fading, Permanence, and Coatings used on Paper Photographs

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Annotated Bibliography: 19th Century Articles on Fading, Permanence, and Coatings used on Paper Photographs

Clara von Waldthausen

*Compiled in 1999 from literature in the collection of
the Harry Ransom Humanities Research Center, University of Texas at Austin*

INTRODUCTION

As there is research currently being performed on coatings on paper photographs, and I have sent this draft, annotated bibliography to a few photograph conservator colleagues, I realize that others may benefit from the information in this annotated bibliography. The objective of the annotated bibliography was to assist me in writing my Masters thesis, *Coatings on Nineteenth Century Paper Photographs: Guidelines for Identification*. My goal was never to publish the bibliography but as it may help current and future research, I put it forward hoping colleagues will forgive its rough nature.

The bibliography is divided into various sections: Fading, Permanence, Coatings, Burnishing and Coloring, all of which are related to the reasons why and the techniques used in coating paper photographs. The bibliography starts in 1844 due to the earliest reference on coatings that I could find. It ends in 1875 because my internship at the HRC ended before I could read later sources.

Terms used to describe a positive photograph on paper: proofs, prints, positives, pictures, positive photographs.

FADING

The Liverpool and Manchester Photographic Journal

Vol. I. New Series. No. 6, March 15, 1858; pp. 72-73.

Dawson, Geo., "On the Printing of Positives."

Recommends Saxe paper since the Canson paper has become so "uncommonly thin". French use starch sizing and English use gelatine. Starch sizing produces better prints. French paper makers bleach with chlorine gas and the English bleach with chloride of lime. French leaves fewer traces of chlorine.

Vol. I. New Series. No. 20. October 15, 1857; pp. 223-224.

Sutton, Thomas, "On the Fading of Positives."

Fading is due to the conversion of silver to silver sulphide, or to silver sulphate and free sulphur. Paper frequently contains free sulphur. Developed prints are more permanent.

Vol. I. New Series. No. 22, November 15, 1858; p. 283.

McCraw, W.C., "On a New Means of Preventing the Fading of photographs."

Doesn't use silver nitrate with albumen. Uses bichromate of potassa and protosulphate of iron and develops in gallic acid and acetate of lead.

Orr's Circle of Science

1856; pp. 256-259.

“On the Fading of Positive Proofs.”

States the reasons stated by the fading committee for the fading of prints.

Journal of the Photographic Society of London

Vol. II. No. 35. October 22, 1855; pp. 240-242.

from 2nd Edition of Mr. Hardwich's "Manual of Photographic Chemistry"

“Remarks on the Fading of Positive Proofs”.

Reasons for fading. 1. Imperfect washing. 2. Weak solutions of hyposulphite of soda. 3. Carelessness in mounting. 4. Light and moisture. 5. Toning without gold. 6. Employment of negative printing process (development by gallic acid) will aid in permanence.

Vol. II. No. 36, November 21, 1855; pp. 251-252.

“First Report of the Committee Appointed to Take Into Consideration the Question of the Fading of Positive Photographic Pictures upon Paper.”

Causes of Fading: presence of hyposulphite of soda left in paper; sulphur in the atmosphere in the presence of moisture. Sulphur.

Vol. II. No. 37. December 21, 1855; pp. 268-271.

Hardwich, T. F., “On the Effect of Certain Oxidizing Agents on Photographic Prints”.

Used strong oxidizers such as Nitric acid, peroxide of Hydrogen, permanganate of potash and chromic acid to study fading. All cause fading at different rates. Developed prints withstand the action better than others. Longer developing time better permanency. Unwaxed salted paper print faded most, waxed salted paper print in white wax and ether was relatively stable but less so than the most stable developed print on albumen.

Vol. III. No. 40, March 21, 1856; pp. 12-13.

Hardwich, T.F., “On Various Agencies Destructive to Photographs.”

Tests and results using: chlorine, hydrochloric acid, sulphuric acid, acetic acid, bichloride of mercury, ammonia, hyposulphite of soda, cyanide of potassium, heat and moisture, products of combustion of coal-gas, decomposition of pyroxyline in negatives. All solutions decompose image. In some cases gold toning gives print more resistance.

Vol. III. No. 41, April 21, 1856; p. 27.

Hardwich, F., “On the Exposure of Positive Prints to a Sulphuretted Atmosphere.”

Photographs printed in various ways were put into a case filled with sulfur gas for 8 days. Not much, to no change occurred except for one print. Hardwiche's conclusion is that there must be more reasons than a sulphuretted hydrogen atmosphere to cause fading in carefully washed prints.

Vol. III. No. 42, My 21, 1856; pp. 39-41.

Hardwich, T.F., “On the Action of Damp Air Upon Positive Prints”.

More than 6 dozen half prints on all varieties of paper exposed to light or dark and printed in various ways.

Conclusion: Fading may be influenced by mode of toning the print (old hypo bath, gold + hypo bath, chloride of gold bath), gold chloride highly satisfactory. "Deleterious matters left in the paper may promote fading by moist air." (size and other organic matter). The use of improper mounting substances. Wax does not protect the print from fading due to moisture. (He was very unscientific and toned those prints with old hypo and a combo bath Hypo/gold). If coating be applied then resize with pure gelatine and use dilute spirit varnish. "...The fading of photographic prints does not depend upon any inherent instability of the image, but that it is due to injurious conditions which I trust have now been ascertained and if so may easily be removed."

Vol. V. No. 80, March 5, 1859; pp. 215-217.

Lyte, F. Maxwell, "On the Causes of the Fading of Proofs."

Feels that traces of copper salts left in the nitrate of silver (sensitizing bath) and soluble chloride found in spring water (washing baths) will cause fading in prints.

Vol. V. No. 85, May 23, 1859; pp. 290-293.

Wilson, George, "On Dryness, and Coldness as Means of Preserving Photographs from Fading."

Did research on bleaching (no relation to photographs) and shows how light, moisture and heat all contribute to fading. States recommendations for preserving prints. Recommends varnishes and resins instead of hygroscopic materials for mounting.

Vol. XIII. No. 192, April 18, 1868; pp. 32-33.

Davanne, M.M. and Fordos, "On the Causes of Deterioration of Prints mounted on Cardboard with Gilt Borders."

Spots on carte-de-visite photographs that were seldom on larger pictures. The Spots are tiny and always visible in numbers and became visible a short time after the pictures had been mounted. They are due to metallic powder present on the surface of the mount.

Vol. XIII. No. 192, April 18, 1868; pp. 34-35.

"The Use of Common Water in Photography."

Some photographers use it without problems. Distilled water is not always pure so photographers should distil their own water when using it for the nitrate bath.

Vol. XIII. No. 193, May 16, 1868; pp. 54-56.

Spiller, John, "On the Occurrence of Hyposulphites in Mounting Cards."

Experiments prove that some kinds of cardboard contains large amounts of hyposulphites which can migrate into the image and cause fading. White board seems to have the largest amount.

Photographic News

Vol. I. No. 25, February 25, 1859; p. 296.

Wellington, "Correspondence. Suggestions on the Causes of Fading."

Suggests a cause would be the poor quality of paper.

Vol. II. No. 34, April 29, 1859; pp. 90-91, 101-102.

“A Catachism of Photography. On the Changes which Take Place in Positive Proofs.”

Conclusions: positive image is pure silver. New pure hypo when properly used does not leave appreciable traces. Darkening and discoloration of proofs is sulphuration of silver. Fix separately.

Vol. V. No. 136, April 12, 1861; pp. 175-176.

Snelling, H.H., “On the Fading of Photographic Prints.”

Lists causes of fading on which: tobacco particles and smoke, temperature of the fixing bath, sour board, soaking paper too long in wash.

Vol. VI. No. 200, July 4, 1862; p. 314.

“Fading of Positive Prints.”

A reminder to write down processing so that all the factors of fading of positive prints can be determined.

Written because of the rapid deterioration of mount boards and photographs during the International Exhibition, largely due the damp walls in exhibition halls.

Humphreys Journal

Vol. XIII. No. 12, October 15, 1856; pp. 196-202.

Taken from *Hardwich's Photographic Chemistry*, “On the fading of Photographic Prints.”

States causes of fading. Lists materials recommended for coating. Recommends development by gallic acid as most permanent. Gives a test for residual hypo in prints.

Vol. XIII. No. 10, September 15, 1856; pp. 158-160.

Hardwich, T.F., “On the Action of Damp Air upon Positive Proofs.

Lists experiments he performed on various prints and the results. Not very consistent testing on the waxed coated photographs.

Vol. XIII. No. 13, November 1, 1856; pp. 187-188.

“An Experiment Proving the Superior Permanence of Developed Prints.”

Advice given by Mr. Sutton to Humphreys. He develops in yellow room.

Vol. IX. No. 16, December 15, 1857; pp. 245-248.

Sutton, Thomas, “On the Fading of Positives.”

Gives definition of fading and talks about the conversion of silver to sulphide of silver or sulphate of silver.

Published in *Photographic Notes*.

British Journal of Photography

Vol. XIX. No. 609, January 5, 1872; p. 3.

Spiller, John, "Albumen as a Source of Fading."

Refers to the sulfur existing in the egg white as "integral" sulphur.

Vol. XIX. No. 664, January 24, 1872; pp; 39-40.

Gayer, E.J., "The Fading of Albumenised Pictures."

Prints don't have to fade if you process each one separately and dispose of hypo bath after each print. Hypo should take place in dark. His prints haven't faded in the ten years he has photographed in India.

Vol. XIX. No. 665, January 31, 1872; p. 47.

"On the Fading of Silver Prints on Albumenised Paper."

Dr. Gayer read a paper to the Photographic Society of London stating the causes of fading.

1. Prints are not sufficiently excluded from the action of light during fixing
2. Fixing bath is commonly overworked.

Vol. XXI. No. 762, December 11, 1874; p. 587.

"Permanence."

The reason why some photographs fade and others do not is still not completely understood. An example is mentioned: Mr. Fox lee's stereoscopic portrait of a lady in 1857. He toned it with the "old fixing and toning bath"--combination bath. It is mounted on bronzed card and is still in excellent condition.

Vol. XXI. No. 762, December 11, 1874; p. 610.

"Answers to Correspondents."

"Encaustic-- We have never heard of any instances in which fading was accelerated by the use of encaustic paste; but we do not think that by use of encaustic paste fading would be prevented."

Vol. XXI. No. 760, November 27, 1874; p. 565.

"On Fading."

Article is written because of law suit of Ayling v. Hyde.

"That certain prints, even from the same batch, will retain all their pristine beauty and vigour, while others, apparently kept under similar favourable conditions, soon begin to assume the sickly yellow hue so symptomatic of sulphuric acid is also well known." "...There is however another source of fading not, perhaps, so generally known, but still of not infrequent occurrence; and as it seems to be in the print itself, and not, so far as we have been able to ascertain, dependent on retained hypo. For its action, it is more difficult to define or guard against. In the case in question the print may be kept for years in the album or portfolio without apparently undergoing any change; if, however, it should be accidentally exposed to a damp atmosphere, or moistened in any part by a drop of water, the fading action commences as soon as the parts have become dry, and go on so rapidly that a few days only are required to spoil the previously beautiful print."

The editor did an experiment with prints in 1862: he mounted 4 prints using glue, dextrine, gum and starch onto a mount board free from chlorine and hypo. In 1874 they removed the photographs, which were in good condition, from the mounts by placing them into a dish of water and allowed them to remain for several hours. The photograph with starch had some trouble coming off.

They were then, while still moist remounted with an alcoholic solution of acid-free gelatin and hot pressed. Two days after remounting photographs which were stable for 12 years showed signs of fading. The question of wet treatment for photographs arise!

Vol. XXII. No. 765, January 1, 1875; pp. 2-3.

“On the Fading of Prints and a Means of Removing From Them the Last Trace of Hyposulphite of Soda.”

There are secondary causes to fading but primary is hypo rests which cause fading in the presence of moisture. Reaction to Mr. Edward Dunmore’s article p. 613 in Vol.. XXI.

Vol. XXII. No. 766, January 8, 1875; p. 23.

Hanson, William, “Fading of Prints.”

Tried using lead and mounted photograph. It faded. Will now test using lead solution on the mount as well.

Vol. XXII. No. 768, January 22, 1875; p. 40.

Dunmore, Edward, “Hyposulphite of Soda and Fading Photographs.”

Response to article in No. 765, pp. 2-3.

Vol. XXII. No. 770, February 5, 1875; 66-68.

“Foreign Notes and News. Dr. Julius Schnauss on the Cause and Cures of Faults in Albumenised Paper.”

According to Mr. Sternfeld, the only two existing German manufactories of rough paper are not able to prepare a sufficient stock of that paper, and the albumeniser is obliged to employ fresh paper in which the size may not be properly dry, thus causing an unequal absorption of albumen, and later on, spots in the picture. Rough paper is paper which has been carefully laid aside for some time. Also covers blistering, red streaks, yellowing and deficient toning of the print.

Vol. XXII, July 23, 1875; pp. 353-354

Lea, M. Carey, “Washing of Prints.”

Suggests including a complexing agent for hypo in the washing bath, i.e. lead, aluminum or barium nitrate. He is afraid that photographers will not bother washing as well if this process is adopted.

Vol. XXII. No. 822, December 31, 1875; p. 627-628.

Barker, J., “On Fading.”

It’s not washing alone that permanency is dependent upon. Barker feels it’s also due to improper fixing. Recommendations are given.

PERMANENCE

Journal of the Photographic Society of London

Vol. II No. 27, February 21, 1855; pp. 121-122.

Sutton, Thomas, "Gold versus old Hypo."

Doesn't use old hypo baths anymore to tone prints but instead gold because it's more permanent.

Vol. II. No. 31, June 21, 1855; p. 177-178.

Malone, "Mr. Malone's Communication on Positive Photographs."

Proposes the use of Caustic Potash as a clearing agent for hyposulphite of soda.

Vol. II. No. 33. August 21, 1855; p. 209-210.

Newton, W.J., "Printing by Negative Process."

Response to Mr. Sutton's article on developing positive prints (no. 32). States that he has written about this process using gallic acid as developer in Vol. I. No. 1. p. 7 of Journal. He has been using the process since 1847.

Vol. II. No. 38, February 21, 1856; pp. 304-307.

Hardwich, T. F., "Mr. Hardwich on the Action of Sulphur upon Positive Prints."

Sulphur toning is less stable than gold toning. Talks about the explanation of the fading action of sulphur upon prints. Developed positives are as a rule superior to those printed by direct exposure to light. Especially when developed upon iodide of silver which is especially resistant to sulphuration. Gold used as a toning agent is to some extent a protection to the print. White wax and ether applied by brushing is beneficial. Evaporation of the solvent however leaves the wax in a somewhat porous condition and the sulphuretted liquid is absorbed by degrees and the print is eventually destroyed.

Vol. III. No. 40, March 21, 1856; p. 14.

Caranza, M. De, "Fixing of Positives by Chloride of Platinum."

Permanency is great, chloride of platinum is one third the price of gold and it does not give a disagreeable bluish tint to the picture.

Vol. III. No. 41, April 21, 1856; pp 9-20.

Newton, Sir W. J., "Printing by Development".

Gives Newton's recipe for Development of positives.

Vol. III. No. 42, May 21, 1856; pp. 50-51.

Lyte, F. Maxwell, "Mr. Maxwell Lyte's New Process of Printing".

Recipe for a process which does not use hypo for fixing. It depends on sensibility of phosphate of silver and its ability to completely dissolve in liquid acid, Hydrochloric acid is used.

Vol. IV. No. 57, August 21, 1857; pp. 15-16.

Sinclair, Colin, "Experiments on the Various Adhesive Substances Used in Mounting Photographs as Affecting the Permanence of the Prints."

Experimented with most common mounting adhesives, starch, albumen, isinglass and gum Arabic to see about their affect on the permanence of photos. Experimented on brown photo on albumen and on a black photo on plain paper. Immersed one piece of a photograph (cut into 5) into each and left for a month. Least affected of the brown albumen were gum Arabic, then isinglass and starch and then albumen, which were effected quite heavily. The black plain print (which was printed so heavily as to show the black image also on the verso) was not affected by any of them.

Vol. IV. No. 63, February 22, 1858; pp.164-165.

Rigby, H., "Positive Printing by Development."

Gives a recipe for developing positives.

Vol. IV. No. 67, June 21, 1858; p. 231.

Sinclair, Colin, "An Account of the Continuation of Former Experiments on the Various Adhesive Substances Used in Mounting Photographs as Affecting the Permanence of the Print."

The prints which were hung in the cellar showed that starch and gum Arabic appeared to be the best to use. The affects of the experiment were slightly different since this time it was the black photograph, which showed more fading.

Vol. VII. No. 114, October 15, 1861; pp. 285-286.

A Member of the Photographic Club, "A Copy of the Photographic Album. Fading Photographs".

39 pictures in *The Photographic Album Vol. ii.* which was published after the fading committee and has examples of photographs printed by members of the fading committee. Fourteen pictures are unchanged and 10 are very faded.

Vol. XII. No. 181, May 16, 1867; pp. 33-34.

"The Permanency of Silver Prints."

Blanchard and his proposal for using collodion as a varnish for prints. The method does not injure the appearance of the print, has no offensive glare. "Mr. Blanchard's preparation rather improves the appearance than otherwise of the prints to which it is applied."

Photographic News

Vol. I. No. 12, November 26, 1858; p. 137.

Monkhoven, M. von, "On Various Methods of Preserving Photographs Against Change and Destruction."

Lists 10 recommendations to do with fixing, washing, toning and mounting.

British Journal of Photography

Vol. XXI. No. 733, May 22, 1874; p. 245.

"An Effort to Obtain Permanent Silver Prints."

Mr. M.E. Thierrée combines weak nitrate of silver bath with the coagulation bath (alcohol).

Vol. XXII. No.769, January 29, 1875; pp. 51-52.

Foxlee, E.W., "Practical Notes on the Fading of Silver Prints."

Compares and contrasts new and old printing methods. For example, new negatives are thin as to produce as many prints as possible in a short time. Old negatives are very dense, printing takes the same amount of time in hours as new neg. take in minutes. Amount of chloride and nitrate and gold is less in new prints for economic reasons. The albumen is thicker in new prints. The image is in albumen layer in new prints and was in albumen and went through to verso of paper support in old ones: more reduced silver particles.

Vol. XXII. No.769, January 29, 1875; pp. 52-53.

Brier, J. Jun., "A Few Remarks About Silver Printing."

Gives recommendations.

Vol. XXII. No. 771, February 12, 1875; pp. 73-74.

"Plain Paper Printing."

Talks about developing a positive on paper and also printing by sun printing and that the effects can be beautiful.

Vol. XXII. No. 773, February 26, 1875; p. 97.

"The Permanence of Photographs Painted in Oil."

Warns the public that only a skilled artist and photographer can paint a photograph which will be permanent well and that it will not be cheap. It warns that only transparent colors be used.

Vol. XXII. No. 794, July 23, 1875; pp. 353-354.

Lea, M. Carey, "Washing of Prints."

Talks about the trend of adding substances to water bath which will change sodium hyposulfite rests into insoluble hyposulfite such as done with lead, barium nitrate and aluminum nitrate solutions.

COATINGS

The Liverpool and Manchester Photographic Journal

Vol. I. New Series No. 12, June 15, 1857; p. 120.

Belloc, M., "Protection of Photographs by Encaustic Paste."

Varnishing, hot-pressing and glazing by rollers are resorted to restore the lost lustre and transparency, but varnish is generally to glittering in its result, and mechanical means are not always at hand. He recommends M. Clausel's varnish which has been used a number of years with good results. It contains: Ceylon elemi, oil of lavender, white wax.

Vol. II. New Series No. 14, July 15, 1858; pp. 178-179.

Monckhoven, D. van, "On Varnishes for Photographic Purposes."

Varnish for negatives should, be sufficiently thick and fluid to protect the negative but not to compromise the transparency. It should be insoluble in water, must not soften under temperatures from 140-200 degrees Fahrenheit. Photographic substances employed in varnishes are: copal, soft copal, sandarac, mastic, yellow and white lac, melted amber, essence of turpentine, benzole, alcohol, ether, chloroform.

Vol. II. New Series No. 17, September 1, 1858; p. 216.
Hobson, Edward Thomas, "Recipe for a white Varnish."
Methylated spirit, gum thus, gum Saudrac.

Journal of the Photographic Society of London

Vol. I. No. 14, February 21, 1854; p. 163

Heineken, E.G. "Gelatinizing Positives. To the Editor of the Photographic Journal."

Process of gelatinizing by which the French artists give such a finish to their photographs: recipe for gelatin. Take clean plate glass, free of scratches, and pass over it a sponge dipped in ox gall. Before ox gall dries pour hot gelatine on middle of glass and allow to flow over plate. Protect from dust and leave to set. Lay picture gently upon gelatine, face downwards, avoid causing bubbles. Leave to harden. When dry run penknife round the margin of picture. It will come off leaving a highly polished surface and having the details of the drawing much more distinctly brought out than they were before gelatinizing. Pictures require mounting otherwise they apt to curl.

Vol. II. No. 20, July 21, 1854; p. 11

Diamond, H. W. "Photographic Difficulties. Amber Varnish."

1 ounce of powdered amber in 8 ounces chloroform, leave 24 hours. Squeeze amber through fine silk, filter through paper.

Vol. II No. 27, February 21, 1855; pp. 121-122

Sutton, Thomas. "Gold versus old Hypo."

Mounts positives permanently to glass to secure the transparency they may possess when in water. This renders the use of albumenized paper superfluous for framed pictures. Doesn't say what he uses. Vol II. No. 39; p. 311, Sutton says gelatin and albumen work well.

Vol. II. No. 30, May 21, 1855; p. 174

Hepburn, Gutch J. "Mounting Photographic Prints"

A cold saturated solution of white wax dissolved in turpentine is brushed over carefully washed and dried print. The wax can be applied before or after mounting.

Vol. II. No. 31, June 21, 1855; pp. 177-178.

Malone, "Mr. Malone's Communication on Positive Photographs".

Proposes a glaze or varnish prepared with carbonate of lead applied to card paper or print. The sulphuretted atmosphere shall pass through the lead compound and shall leave the sulphur with the lead. The print will then be retained unchanged as to tint or intensity. (See also permanency).

Vol. II. No. 36, November 21, 1855; pp. 251-252.

“First Report of the Committee Appointed to Take Into Consideration the Question of the Fading of Positive Photographic Pictures upon Paper.”

Out of several prints prepared in 1844 three only are unaltered: they are varnished soon after preparation with copal varnish. 3 prints in 1846 all with same processing: Canada balsam coated was unaltered, unmounted was unaltered, but flour-paste mounted print was faded.

Vol. II. No. 39, February 21, 1856; pp. 307-309.

Lyte, J. Maxwell, “On a New Method of Printing.”

Expose print somewhat darker than normal and process just as you would salted paper. The well washed and still wet proof is now placed in a bath of aqua regia 8-10 parts and 100 parts water. When almost completely faded place in bath of alkalized water (using carbonate of soda and a few drops of ammonia). Then redevelop in 1 pint water and 2-3 drops gallic acid (saturated solution in alcohol). Add 1 drop liquor potassae. Then wash in clean water. Cover print with encaustic: white wax in turpentine and add alcohol in half the volume of turpentine employed.

Vol. III. No. 41, April 21, 1856; p. 35.

Howlett, Robert, “On the Preservation of Photographic Pictures”.

Writes about a Roman method he has adopted. Dissolved white wax in common turpentine. Cool and brush onto photograph and rub in with flannel. Allow to dry and polish with brush. For both plain and albuminized paper.

Vol. III. No. 52, March 21, 1857; pp. 248.

Editor in column “Answers to Correspondents”.

A reference is made in replying to T.S. to varnish the picture with Canada balsam. (It is unclear whether picture refers to collodion positive or a positive on paper.)

Vol. III. No. 54, May 21, 1857; pp. 285-286.

C.W., “Further Remarks on the Application of Mr. W.E. Gaine’s Parchment-Paper to Photography”.

W.C. explains that when paper is dipped into 2:1 Sulphuric acid: water the paper is converted into parchment-paper; “a substance so strong, that a ring seven-eighths of an inch in width and weighing more than 23 grains, sustained 92 lbs.; a strip of parchment of the same dimensions supporting about 56 lbs. It absorbs water but does not percolate through it. W.C explains that a finished positive photograph which undergoes floatation on sulphuric acid and is washed afterwards in water has an increase in sharpness and has a hornlike hardness and gloss. W.C. believes pictures treated thusly are less liable to fade and urges photographers to experiment on the subject.

Vol. VII. No. 104, December 15, 1860; pp. 52-57.

Thomas, “How to Varnish the Negative.”

Interesting to research on coatings of positives because it goes into detail of composition and characteristics of some varnishes which were also used in recipes for positives on paper. Ends with an in depth discussion of members of the society.

Vol. VII. No. 108, April 15, 1861; pp. 156-160.

Lyte, F. Maxwell, "On Photographic Printing."

In albumenizing do not add acetic acid. Saxe is best paper....

After picture is washed mount print using paste or potato flour. When dry pass it through a satining press or hot-press if possible, "and lastly, (the print must be) fixed in a small wooden frame, made and sold for the purpose, and called a stirator, and rubbed over with the following encaustic: white wax, turpentine, copal varnish. (Gives complete recipe). Apply with flannel and rub off with flannel. "...Not only is the print much protected from being injured by moisture or deleterious gases, but even the finest albumenized proofs are much improved in appearance, and all the deep shades gain in detail."

Vol. VII. No. 113, September 16, 1861; pp. 274-275.

"India-rubber Varnish."

Dissolve India-rubber in benzine and strained. Use liquid, "... it dries very fast and does not shine, unless mixed with resinous varnishes. It is extremely flexible, may be spread in very thin layers, and remain unaltered under the influence of air and light. It may be employed to varnish geographical maps or prints ...".

Vol. XII. No. 181, May 16, 1867; pp. 38-40.

Blanchard, Valentine, "On the Best Means of Rendering Silver Prints Permanent."

Alkaline toning was a big step to permanence and old hypo as a toner is now rarely used.

"Various methods have been tried at different times to protect them from atmospheric action, and with varying success (French polish, varnish, collodion, gelatin and many other substances); but they have been all applied to the mounted and finished print. Some of these methods have produced beautiful results; but being difficult in their application, they have fallen into disuse."

Blanchard experimented with coating both recto and verso of the print with collodion and castor oil, white hard varnish, or linseed oil etc.

Vol. XII. No. 182, June 15, 1867; pp. 56.

Monthly Meeting of the North London Photographic Association: Mr. Belton and Mr. Stewart printed some pictures and collodionized them recto and verso. Mounted with gum Arabic or French glue.

Vol. XII. No. 185, September 16, 1867; pp. 104-105.

"Foreign Photographic Notes."

Dr. Böttger published in the 'Polytechnisches Central-Blatt' a recipe for coating positives. Copal varnish, recipe is given.

Vol. XIII. No. 193, May 16, 1868; pp. 56-58.

"Vitrified India-rubber Sheet."

M.A. Marion is manufacturing a sheet for collodion images to be transferred onto. It can also be used as a protective coating for prints. The exact mixture of the material is secret but the author believes some of the components are collodion and castor oil.

It is probably borrowed from Herr Grune's "leather collodion" which has the same components and to which Dr. Vogel proposed to add a supplement film of India-rubber when used to transfer negatives.

Vol. XIII. No. 196, August 15, 1868; pp. 117-118.

"Foreign Miscellanea."

M. Bienert gives formula for positive varnish: collodion, white wax, ether, alcohol, white shellac.

Vol. XIII. No. 197, September 15, 1868; pp. 133-136.

"Mons. Adam-Salomon in London." And a following article, "Encaustic Pastes,--M. Adam-Salomon's Formula."

"A good encaustic confers three special benefits on the print: it gives depth, richness and transparency to the deep shadows; it renders apparent delicate detail in the lights which would otherwise remain imperceptible; and it aids in protecting the surface and so tends to permanency."

Modifications of A-S. Formula editor of JPSL: white wax, gum elemi, turpentine, essential oil of lavender and spike.

A-S. Formula H.P. Robinsion: white wax, gum elemi, turpentine, oil of spike

A-S. Improved Formula: Wax, gum elemi, benzole, essence of lavender and spike.

Editor refers to M. Bienert's formula (above) as also good.

Vol. XIII. No. 197, September 15, 1868; p. 140.

"Permanency of Collodion Films."

A correspondent of the photographic news states that he used collodion to coat positives 8 years prior and they have been exposed to damp, heat and sun and not a single film has been affected.

Photographic News

Vol. I. No. 5, October 8, 1858; p. 60.

"Varnish for Paper Stereograms."

Gum Arabic dissolved in water is the most usual.

Vol. I. No. 8, October 29, 1858; p. 95.

Heywood, John, "Varnish for Paper Stereograms."

Size print using brush with gelatin dissolved in water. Let dry and then coat sized picture with gum dammar dissolved in coal naphtha.

Vol. I. No. 11, November 19, 1858; p. 132.

W.S., "Encaustic for Positive Prints."

Varnish for salted paper prints: white wax, Venice turpentine, spirits of turpentine and bring to a consistency of cream. Apply to photographs after mounting.

Vol. I. No. 12, November 26, 1858; p. 144.

“Amber Varnish”

Chloroform, powdered amber and clean sand.

Vol. I. No. 14, December 10, 1858; p. 167.

W. W.H., “Glaze for Paper Positives.”

In reply to Da Lucem. Process albumen prints as usual. Float print on dilute bath of alcohol and water for 3-4 minutes and dry. Mount print and roll. Coat with freshly made albumen.

Vol. I. No. 14, December 10, 1858; p. 168.

“Answers to Minor Queries. Gelatinising Positives.”

Attain a high gloss for paper positives. On a clean glass pour ox gall and then gelatin. Let harden a bit and place photograph on top (facedown). Dry. Remove the print from glass using sharp knife.

Vol. I. No. 18, January 7, 1859; p. 214.

“Photographic Notes and Queries. Varnish for Paper Stereograms--Ormolu for Colouring Gold Frames.”

Parchment size bought at any gilder. Size print in both directions using parchment size. Dry and coat with mastic or dammar varnish. The size prevents the varnish from penetrating the paper.

Vol. I. No. 21, January 28, 1859; p. 252.

“To Correspondents.”

Editor replies to H. Haakman, “...Papier Saxe is sometimes used but in any case the stereograms are glazed or varnished afterwards, in order to give them the gloss you speak of.”

Vol. I. No. 22, February 4, 1859; p. 257.

Seeley, C.A., “Caseine for Photographic Purposes.”

Refers to an article in Vol. I p. 183 written by M. Duchochois about the uses of caseine. Author agrees and mentions that besides the uses suggested by M.D., caseine also makes a good varnish for positives on paper. Rough recipe is given.

Vol. II. No. 31, April 8, 1859; p. 53.

“A Catechism of Photography. Varnishing”.

“...Covering the print with a coat of varnish certainly contributes to its preservation from atmospheric influence, but it is only as preservative that it is really useful.” Prior to varnishing coat print using a flat brush with coating of warm gelatine or pure white size to stop varnish from sinking into picture. “Different kinds of varnish are used; but spirit varnish will be found to answer exceedingly well.”

Vol. II. No. 41, June 17, 1859; pp. 172-173.

Scott, Wentworth L., "Leather Varnish for Positive Prints."

A. Gelatin, distilled water, egg white. Dry prints can be immersed for 5-6 minutes.

B. Tannic acid dissolved in distilled water. Immerse dried prints for 15 minutes. Impregnate prints in the two solutions several times.

Vol. II. No. 43, July 1, 1859; p. 204.

S., T.H., "Varnish for Alabastrine Photographs."

Don't varnish with spirit varnish, they turn dark.

Vol. III. No. 63, November 18, 1859; pp. 122-123.

"Photographic Varnishes."

Three groups: soluble in alcohol, in turpentine, and those dissolved over open fire at 300 F and then mixed with boiling linseed oil. Gives three recipes for varnishes for positives, ingredients include: Copal, mastic, white elemi, pounded glass, Venice turpentine liquid, white gum lac, sandarac, alcohol and stearic acid.

Vol. III. No. 70, January 6, 1860; pp. 213-214.

Photographic Jottings. --No. 2.

Mr. Martin introduces *Crystal Enamel* manufactured by Messrs. Horne and Thornthwaite of Newgate Street. Article explains how to apply it to positive prints but doesn't name its ingredients. "The mere allusion to this will, I am sure, be sufficient to awaken a recollection of the desire which all have entertained that the picture might be made to retain, or gave imparted to it, the same amount of brilliancy when dried and mounted; this however, it is hardly necessary for me to add, has been found hitherto unattainable..." Also mentions that this enamel will aid in protection against fading...hence permanency of the print if well washed.

Vol. IV. No. 87, May 4, 1860; pp. 1-2.

"On the Causes of Fading in Positive Proofs".

Reasons: hypo and washing. "Several kinds of varnish have been proposed for covering the proof with a substance impervious to the air. This method is not only advisable, but necessary to the preservation of the layer of metallic silver." No recipes given.

Vol. IV. No. 94, June 22, 1860; pp. 93-94.

"South London Photographic Society".

Simpson exhibited photos taken by his alabastrine process, coloured and varnished with Newman's penetrating varnish, thus rendering them non-inverted, and giving an effect resembling enamel.

Vol. V. No. 146, June 21, 1861; pp. 292-293.

Lyte, F. Maxwell, "On Toning Positives on Albumenized Paper."

Mount print with starch paste, pass through rolling press and varnish. White wax, spirits of turpentine, fine copal varnish. "By this means the proof is not only protected against moisture, and deteriorating gases, but albumenized paper gains considerable brilliancy, and the deep shadows acquire an agreeable transparency."

Vol. V. No. 153, August 9, 1861; p. 374.

“New Varnishes.”

All about negative varnishes and their characteristics and recipes.

Vol. V. No. 157, September 6, 1861; p. 429.

Harmer, R., “Albumenizing Paper on Both Sides.”

Creates greater permanence and no curl. Also no need to mount prints.

Vol. V. No. 161, October 4, 1861; pp. 477-478.

“Miscellaneous. India Rubber Varnish.”

Dissolve India rubber in benzine and combine fixed or volatile oils. Very flexible.

Vol. VI. No. 175, January 10, 1862; pp 17-18.

Nichols, H. R., “A Few Words on the Manufacture of Photographic Varnishes”.

Varnishes for negative and positive collodion.

1. Varnishes for paper pictures. Picked gum mastic and turpentine
2. Liquid enamel or polish. White shellac, sandarac, mastic, spirits of wine.

Vol. VI. No. 181, February 21, 1862; pp. 85-86.

“Varnishing and Waxing Prints”.

Reasons for varnishing/waxing: “...give more brilliancy, depth, and transparency to the picture; and protect it from the destructive action of varied atmospheric conditions”. Gives recipes for all. Gives pros and cons of all, yellowing, hygroscopicity of varnishes etc. Author defines varnishes/coatings as vulgar.

1. French gelatine varnish
2. French polishing
3. Wax, do not dissolve in turpentine, it yellows and can react with image. Benzole, chloroform or essential oils will all do to dissolve wax. “...Essence of spike, lavender or rosemary the cheapest of the essential oils, we have used with complete satisfaction.” Author recommends wax for solar camera developed prints. “Many continental photographers varnish their enlarged prints...” Author mentions types of recipes: Clausel’s encaustic paste, Mr. Reijlander who generally uses it upon his own prints (white wax, poppy oil inspissated by heat and an essential oil), Messrs. Newman enamel or encaustic paste. Describes method of applying wax.
4. Gum Arabic
5. Gelatin
6. Canada balsam
7. Soehnée varnish

Coat plain or slightly albumenized papers first with gelatin before varnishing.

Vol. VI. No. 194, May 23, 1862; p. 248.

“Varnishing Photographs.”

Mr. J. Longwell’s method is to use gelatine, alcohol, and water

Mr. Sinclair feels “that photographs should resemble engravings as much as possible and therefore should not be varnished. ...For those who follow it (photography) as a business the

case is very different, nine out of ten of our customers want their pictures varnished: ‘They look so much better’. ‘...A properly varnished photograph is more lasting than one not so protected. Sinclair uses gum Arabic and ‘Artist’s Picture Varnish’--to be had of all color men and dealers in artist’s materials.

Vol. IX. No. 335, February 3, 1865; pp. 50-51.

‘‘Enamelling the Surface of Photographs.’’

Uses collodion poured onto glass plate and a varnish poured onto it. The print is placed on this varnish and then blotter and glass plate on the back to allow a good contact while drying. Collodion is the top layer. Varnish consists of Gum Juniper, gum shellac, black rosin or fiddlers rosin, camphor, spirit of wine (methylated).

Vol. XII. No. 523, September 11, 1868; pp. 433-434.

‘‘Encaustic Pastes--M. Adam-Salomon’s Formula’’

1. White wax, gum elemi, turpentine, essential oil of lavender, essential oil of spike
2. Pure virgin wax, gum elemi, benzole, essence of lavender, oil of spike
3. Formula used by Messrs. Robinson and Cherrill that they worked out after Salomon visited their studio and gave them materials without the proportions.

Pure white wax, gum elemi, turpentine, oil of spike, essence of lavender it is in different proportions, thinner than Salomon’s. ‘‘Mr. Robinson writes to the effect that the trouble they experienced in getting good results with encaustic pastes on large pictures had induced them to give up its use; but that all difficulties seem to be removed by the preparation the formula of which we subjoin:--...’’ ‘‘It has the disadvantage, however, in some cases where the surface of the paper is soft and absorbent that it permeates the whites, and leaves a slight discoloration like grease, which is very slow to disappear, notwithstanding that the solvents are volatile.’’

4. Formula of M. Biennert given in the *Archiv*: White wax, ether, plain collodion, white shellac varnish, alcohol

Humphreys Journal

Vol. VI. No. 22, March 1, 1854; p. 343.

Heineken, E.G., ‘‘Gelatinizing Positives’’.

Letter dated 15 December, 1853.

Vol. VIII. No. 12, October 15, 1856; pp. 196-202.

Taken from *Hardwich’s Photographic Chemistry*, ‘‘On the fading of Photographic Prints.’’

Coat using spirit varnish. Wax and turpentine could introduce impurities into print.

Vol. IX. No. 7, August 1, 1857; p. 109.

‘‘New Method of Varnishing Positive Prints.’’

M. Blanquart Evrard published his ‘‘verniss cuir,--leather varnish’’ recipe in *Photographic Notes*. Immerse print in a bath of gelatin dissolved in water and when dry in a bath of water saturated with tannic acid. Let dry and recoat as often as desired.

Vol. IX. No. 8, August 15, 1857; p. 126.

“Protection of Photographs by Encaustic Paste.”

M. Belloc recommends Mr. Clausel’s recipe: Ceylon elemi, oil of lavender, white wax, oil of cloves. Apply with finger and buff with woolen pad to attain gloss. Varnishing, hot-pressing and glazing by rollers are also resorted to.

Vol. XI. No. 1, May 1, 1859; p. 7-9.

“Letters to a Young Photographer.--No. 6.”

Talks about mounting and glazing.

Rolling press is named to attain a glaze.

Higher glaze is obtained with a varnishes.

1. Egg white, water and gum Arabic, or

2. Gelatin, water and gum Arabic

3. Preservative varnish: white wax, oil of lavender, oil of cloves

4. Canada balsam

5. Mastic or dammar resin are sometimes employed according to the fancy or predilection of the artist, but some kind of previous sizing is necessary.

Vol. XI. No. 4, June 15, 1859; pp. 94-95.

“Manipulatory Details.”

“Paper prints to be varnished must have a good sizing; they may be ‘French polished’, which gives the best possible face; or they may be varnished with what is known as white paper-varnish sold by the varnish makers. We believe also that pure white wax and turpentine is sometimes employed for this purpose.”

Vol. XI. No. 14, November 15, 1859; p. 215.

“Albumen Prints.”

Shellac varnish is the best for albumen prints: dissolve white gum shellac in alcohol.

Vol. XIV. No. 13, November 1, 1862; pp. 153-154.

“Wax Varnish for Prints on Plain or Albumenized Paper.”

“... their beauty is very much heightened by rubbing them thoroughly with the following varnish...” White wax 1 ounce, oil of turpentine 1 ounce, gum mastic half a drachm.

Vol. XIV. No. 17, January 1, 1863; pp. 216-217.

Mailand, “Varnish and Encaustic for Negatives and Positives.”

Equal parts of white wax and oil of turpentine. Add 10 grains of mastic to 100 grains of essential oil. Mix the two.

Vol. XVII. No. 20, February 15, 1866; pp. 305-308.

“To Glaze the Surface of Photographs”.

Editor lists 4 methods of applying a coating of collodion to paper positive prints. Use plain uniodized collodion. “Gives the surface of the photographs a glistening transparent film which in some respects gives them the appearance of being glazed.” Alcohol, ether and pyroxyline are used.

British Journal of Photography

Vol. XIX. No. 618, March 8, 1872; pp. 110-111.

Gordon, R. Manners, "Experiments in the Preparation of Varnish."

Experimented with seed lac, purified seed lac, orange lac, shellac, bleached lac, sandarac, benzoin, mastic and copal and especially their effects in ammonia. Reference to Soehnée Varnish as possibly being bleached lac.

Vol. XIX. No. 613, February 2, 1872; p. 47.

"A Shellac Varnish."

By adding ammonia to shellac varnish it will become miscible in water.

Vol. XXI. No. 760, November 27, 1874; p. 565.

"On Fading."

Article is written because of law suit of Ayling v. Hyde. (See also fading).

States that a coating of collodion on front and back of print, or some of the encaustic pastes will protect print from atmospheric influence.

Vol. XXI. No. 758, November 13, 1874; pp. 540-541.

"Print Burnishing."

Burnishers are an American invention. To give albumenized photographs a high finish (polished surface). Coat each print with alcohol and Castile soap and then burnish (one grain to the ounce).

Vol. XXII. No. 771, February 12, 1875; pp. 73-74.

"Plain Paper Printing."

Talks about developing a positive on paper and also printing by sun printing and that the effects can be beautiful. Also states that the prints can be coated with almond oil in benzoline. Imparts deepness without conferring any glaze.

Vol. XXII. No. 774, March 5, 1875; pp. 116-117.

"Foreign Notes and News. The Protection of Pictures by an Insoluble Size."

Protect pictures and cards from dust. Pour a mixture of gelatin glue, ox gall, argil onto glass plate let dry. Coat with thin film of gelatin glue and place picture face down. Let dry. Includes recipe.

Vol. XXII. No. 819, December 3, 1875; p. 582.

Dunmore, Edward, "A New Method of Finishing Photographs."

Enamel your print, as enamelling, though not absolutely a sine qua non, is a decided advantage. Then he talks about adding decoration in the mount surrounding the print by pressing sandpaper, lace etc into the mount using a rolling press.

Vol. XXIV, No. 893, 1877; pp. 279-280.

"Shellac, and Its Use in Varnishes."

Talks about history, properties and manufacture of shellac.

BURNISHING

Orr's Circle of Science, 1856

"Positive Printing." p. 246-252.

Use an agate burnisher and rub back of the print that is lying face down on glass. "This hardens the grain of the paper and brings out the details of the picture."

The British Journal of Photography

Vol. XX. No. 705, November 7, 1873.

"Burnishing Prints."

Talks about the difference between burnishing and polishing. Gives the patent information on the new burnisher by Weston patented in England.

Vol. XXI. No. 758, November 13, 1874; pp. 540-541.

"Print Burnishing."

Burnishers are an American invention. To give albumenized photographs a high finish (polished surface). Coat each print with alcohol and Castile soap and then burnish (one grain to the ounce).

Vol. XXII. No. 784, May 14, 1875; pp. 314-315.

"Improvements in Print Burnishers."

J.P. Bass who is proprietor of Weston Patent for burnishers and his burnishers. USA

Vol. XXII. No. 791, July 2, 1875; pp. 314-315.

"An Improvement on the Rotary Print Burnisher."

Article alludes to Weston's rotary burnisher and an improvement on it which allows for user to have two hands free. USA

Vol. XXII. No. 792, July 9, 1875; p. 328.

"Rival Print Burnishers."

Mr. Entrekin's patent for a burnisher, 'Entrekin's oscillating enameller'. It may be superior to bass/weston burnisher. USA. The editor had not seen one.

Vol. XXII. No. 795, July 30, 1875; pp. 363-364.

"Oscillating Burnishers."

Review of the Entrekin oscillating enameller. It works very well. Stereoscopic pictures were used.

Vol. XXII. No. 806, October 15, 1875; p. 493.

"A New Reciprocatory Burnisher."

New burnisher. Article states that, "Print burnishing is now being carried out very extensively and anything done to render its practice easier will be hailed with interest."

Photographic News

Vol. VI. No. 184, March 14, 1862; pp. 212-122.

“Hints on Rolling Prints”

Due to portraiture rolling press. Most were French but this article talks about an English one. Tips are given for burnishing. “... a most perfectly even burnished surface is given to the print, which seems to have a similar effect to the varnishing of a painting or polishing of wood; detail before scarcely seen seems to bear out in a most surprising manner, giving the utmost delicacy and finish to the print.”

COLORING

Journal of the Photographic Society of London

Vol. II. No. 21, August 21, 1854; pp.21-22.

Minotto, M. “Method of Colouring Photographic Pictures”.

Using a system of coloring which was used in Germany to color lithos and etchings in 1824: oleocaligraphy or lithochromy. Color on verso with oil or watercolor than render print translucent using varnish, wax or oil of ben. Varnishing the paper prior to coloring can also work.

Spirits of turpentine: Mastic: Venice turpentine: powdered white glass, 7:1:3:10. Canada balsam dissolved in spiritis of turpentine also works well.

Vol. II. No. 26, January 22, 1855; pp. 113-114.

Lock, S.R. “Colouring Photographs.”

Above method by Minotto no good. Only way to color is to use pure transparent colors--not of powder, chalks or oil.

Vol. II. No. 39, February 21, 1856; p. 316.

R.J. “Colouring Photographs in Oil”.

Pass a clear varnish over portrait after processing. Paint with oil colour very sparingly, keeping shadows warm with a thin glazing of colour.

Photographic News

Vol. I. No. 12, November 26, 1858; p. 144.

“To Correspondents.”

Editor replies to Da Lucem that albumen stereograms can be colored if surface is coated with oxgall.

Vol. V. No. 146, June 21, 1861; p. 297.

A Stranger, “Colouring on Albumenized Paper.”

Make a mixture of albumen and watercolor.

Vol. IX. No. 336, February 10, 1865; p. 71.

Fruwirth, D., "Photographic Notes and Queries. Waterproof Colouring."

1. Rub painted picture with wax and ether.
2. Glaze after painting... Doesn't say what glaze is.

British Journal of Photography

Vol. XXI. No. 763, December 19, 1874; pp. 600-601.

Perkins, Henry S. "Photographic Colouring."

"The art of colouring is now universally employed in connection with photography. Many of the largest houses depend on colouring as their chief sources of income, and the only one from which they derive a clear and unbroken profit." "Now that the subject of enlargements has been brought so prominently before the notice of the public, and we are entering on a new era in the progress of photography..."

Vol. XXI. No. 724, March 13, 1874; 129.

Sutton, Thomas, "Correspondence. The New French Process of Colouring Paper Portraits in Oil and Mr. Duppa's Patent for the Same."

Oleography. Rendering photograph transparent and coloring in the back. Same as Duppa's patent for using the German method of coloring lithographs and etchings, only now in France and twenty years later.

Vol. XXII. No. 777, March 26, 1875; p. 145.

"Tinting Photographs."

Mr. W.E. Debenham's method: take gelatinous substance (a few are named) adds alum and mix with at least 50% alcohol. The alcohol will prevent pigments from running and is most crucial. Apply to surface and color with pigment. A bit vague in application.

Vol. XXII. No. 793, July 16, 1875; p. 341.

"New Method of Colouring and Mounting Photographic Pictures."

Adolphe Henri Braun of Paris and his patent for coloring. Consists of semi transparent paper as a support for carbon pictures, and the mounting of such a picture when coloured on canvas or other suitable material which will imitate an oil painting.

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