

March 8, 1977

Star Route 3 - Box 223  
Kimberling City, Missouri  
65686  
(417) 739-4982

Feb

Dear Laura ~

I am the man who telephoned you tonight to ask about the Platinum/Palladium Print Process ~ what materials are required in what quantities, their costs, and who (name and address) sells them. Also ~ any particular chemicals involved in the processing of these prints, etc. (times, temps, proportions).

I have some chemistry lab experience at the graduate level (university), so how I wish I were there with you to help out.

After a good number of years of exposing film, I finally have a nice coordinated number which are just itching to go on these kind of prints.

I am squirming in my skin, just waiting to hear from you!

While you are writing it all up for me, I'll run right out and make some exposures of some of these Ozark folks and crafts. You wouldn't believe the faces and their songs and mythologies.

My Best ~ Dick Mappes

Young & Co. -



WORLD BOND  
MADE IN U.S.A.



April 15, 1977

Mr. Carl R. Mappes  
Star Route 3 - Box 223  
Kimberling City, Missouri 65686

Dear Mr. Mappes:

Mr. Wood, the Executive Director of the Society of Photographic Scientists and Engineers, has forwarded your letter of March 3 to me for reply.

Perhaps I can be of some help by enclosing a photo copy of several pages from an old photographic formulas book which describes the process in which you are interested. Note that it is described as identical to the platinum process but with palladium salts substituted for the platinum salts given in the formulas.

If my memory serves me well, I think that I had some correspondence with Mr. Strand when he was working on this same process. Unfortunately that was about 15 years ago and our record retention does not go back that far. So, I am not able to refer to that previous correspondence.

I can find nobody here who professes any knowledge of this process currently. Nor do we know anyone (other than you) currently working with the process. Some of our chemists suggest that most of the inorganics mentioned in the formula are commonly available with the possible exception of potassium chloroplatinite ( or presumably in your case potassium chloropalladite). In that case, probably one of the better sources to check for availability would be the J. T. Baker Chemical Company, 222 Red School Lane, Phillipsburg, N.J. 08865.

However, I must warn that if there is no commercial demand for this chemical, a purchase might have to involve a minimum order sufficient for them to make a laboratory run to produce it. I have no idea what this quantity might be, but it could conceivably be considerably more than you might wish to purchase unless you are going into large-scale production of palladiotype prints.

Mr. Carl R. Mappes -- 2  
April 15, 1977

The only other source of information that I can direct you to would be to Eastman House, 900 East Avenue, Rochester, N. Y. 14607. I think that if you are a member, or "associate" as they call it, they will do a modest amount of library research for you in their collection of historical photographic books. They might be able to turn up more information for you than that which I am enclosing.

Yours very truly,

*Allie C. Peed, Jr.*

Allie C. Peed, Jr., Manager  
Advertising, Promotion and Publications  
Professional and Finishing Markets

ACP:km  
Enc.

cc: Mr. R. H. Wood



13 April 1977

Mr Carl R. Mappes  
Star Route 3  
Box 223  
Kimberling City  
Missouri 65686  
U.S.A.

Dear Mr Mappes,

From your description, it would seem that the prints are probably platinotypes (or palladiotypes). These printing papers were fairly common about the turn of the century, until about 1920 and examples are not difficult to find. They are characterised by an unmistakable silvery tone and absolute permanence.

I am pretty sure that no one makes plantinotype paper anymore and, in any case, they would be on paper. I have therefore copied a few pages from Photography, Theory and Practice, 2nd Edn., by L.P. Clerc, published by Pitman and Greenwood, London, 1937, in which Clerc describes how to make platinotype papers. I have never tried to make any myself, but Clerc was very sound.

To coat on copper instead of paper, I would increase the gelatin content of the mixture to at least 2%. The copper must be clean and free from grease. Solvents are not sufficient for cleaning. I would recommend polishing with a suspension of fine, precipitated chalk in water until the water flows evenly all over the plate without retracting or gathering into droplets - keep your fingers off it!

Lay the plate on a very level surface and, since copper is a good conductor of heat, it had better be warmed. Run the solution containing the gelatin evenly over the plate with a glass rod, about 10cc per half plate will be a good starting point. Then let the gelatin set and the coating dry. It is important obtaining even coatings that the gelatin sets first before the layer drips, so get photographic grade gelatin. The edible variety is too sloppy.

2,

It is important to vary the volume of liquid coated by much more than a factor of 2, so if the image is far too thin or too heavy it will be necessary to vary the concentrations of the solutions.

The material is very slow - similar to blue print - so it can only be used for making contact prints in sunlight. It also means it is not easy to fog; the only dangerous time being when it is drying after coating.

Finally, it will probably be cheaper to use potassium chloropalladite instead of chloroplatinite, but since most of the cost will be in time and labour, perhaps this will not matter.

The best of luck! and I shall be interested <sup>to hear</sup> if you have any joy.

Yours sincerely,

*Peter Hillson.*

P.J. Hillson  
Research Division.

Encl:



23 March 1977

Mr Carl R. Mappes  
Star Route 3 - Box 223  
Kimberling City  
Missouri 65686  
U.S.A.

Dear Mr Mappes,

I am unclear from your letter what exactly you want. When you say you want a copper substrate with a platinum emulsion, do you want a normal photographic-type emulsion, containing grains of a developable platinum salt in a gelatin matrix coated on copper, or do you want a platinum image lying directly on a copper substrate. If the former, it would be easiest to start from the formulae given for platinotype papers in old (ca. 1900) photographic hand books and coat the emulsion on copper sheets. If the latter, Phillips have published a method for producing mercury nuclei on a substrate which are then physically developed with copper to give coherent copper images suitable for making printed circuits. Standard physical developers (usually termed "electroless plating solutions") for laying down other metals are readily available.

If you could be more explicit in saying exactly what you want and roughly for what purpose, I could probably provide suitable literature references.

Yours sincerely,

*Peter Hillson*

P.J. Hillson  
Research Division.

SOCIETY OF PHOTOGRAPHIC SCIENTISTS



AND ENGINEERS

XXXXXXXXXXXXXXXXXXXX  
1330 Massachusetts Avenue, N.W.

Washington, D. C. 20005 (202) 347-1140

1411 K Street,

Robert H. Wood, Executive Director

February 22, 1977

Mr. Carl R. Mappes  
Star Route 3 - Box 223  
Kimberling City, MO 65686

Dear Mr. Mappes:

Your letter has been forwarded to a Society member who may be of help to you in your request of February 16, 1977.

Sincerely,

*Robert H. Wood*

Robert H. Wood  
Executive Director

*Dms*

RHW/dma

Photo Copy To:  
~~Cal McCannell~~  
RHW  
2-15-77

Star Route 3 - Box 223  
Kimberling City, Missouri  
65686

16 February 1977

Society of Photographic Scientists  
and Engineers

The Thomas House, Suite 204  
1330 Massachusetts Avenue, N.W.  
Washington, D.C. 20005

Gentlemen:

For some years now I have been in unsuccessful search of certain practical (applied) technique information regarding the making of metallic-base palladium and/or platinum photo positive prints.

The technique is quite old, and most permanent. I have had the wonderful opportunity to personally see a few such plates when on a trip in California. They were about 6" X 9" in size, and valued at about several hundred dollars each. It is my understanding that the rare element metals are laid down on the metallic-based plate during the time of coating the emulsion, possibly done electrolytically. The base appeared to be copper, while the rare element metal in the emulsion was of a (translucent) silver-gray tone. I have made several queries concerning this process to the Eastman Kodak Company in Rochester; however, all replies I receive are made in apparent lack of knowledge of the process--they usually refer to one or more of their beginning books for amateurs with techniques described for Kodak materials (paper base, toners, etc.).

All articles I have read in your publications do not deal directly with applied photographic technique in understandable language, and I have never seen any that deals even vaguely with the process into which I am searching. Perhaps, for sake of clarity, it would be good for me to succinctly point out, by contrast, what the materials are, and what they are not.

<u>ARE</u>	<u>ARE NOT</u>
Metallic-based (probably copper)	Paper-based
Emulsion: gold palladium platinum (possibly selenium) (possibly some silver)	Emulsion: silver  Sepia-toned Blue-toned Selenium-toned Copper line-etched

Carl R. Mappes  
16 Feb. 1977

Probably small traces of copper in the base plate metal act as an electrolytical catalytic agent in the formation of the positive image in the rare element metal emulsion.

The theory of the process interests me little to none at all. What I am trying to find out is the location and price of the materials so that I might acquire some in small to moderate amounts to make some prints via this process, and the formulae for the appropriate developer, stop bath, fixer, hypo clearing agent, and any special chemical for giving permanency treatment to the final surface of the print.

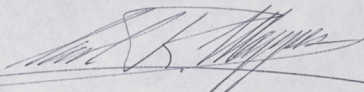
I just feel sure that you, or someone within the S.P.S.E. membership, or within its reading and/or hearing range would know the details which I am seeking. As I said, all persons handling my queries addressed to Eastman Kodak in Rochester have had no knowledge of this long traditional process whatsoever. No doubt, the wrong people there are given the job of answering such inquiries direct, instead of searching out personnel in their company who do know this process completely.

I need your help, and will deeply appreciate anything you will do to see to it that all the details reach me in as short a period of time as humanly possible.

I am sorry that I have not kept my membership dues paid up during the past few years; they were paid out of a personal educational loan which is still not repaid. Thus, I have had to cease making membership payments until that loan is completely cleared. This is taking some time, since I am not currently employed (I have been found to be "over-qualified" by about the past 3,000 consecutive employers I have approached).

I truly appreciate your forbearance in this <sup>6</sup>dealy of dues.

Respectfully,



Carl R. Mappes

Regular Member #7508

(The chemical element) PALLADIUM

--named after the asteroid Pallas

--a rare metallic element of the platinum group, silver-white in color, ductible, malleable, permanent in air, but lighter in weight (specific gravity = 12.0) and more easily fusible than platinum.

Symbol = Pd

Atomic No. = 46

Atomic Weight = 106.7

(The chemical element) PLATINUM

--named from "plata", which comes from "platina", meaning "silver"

--a heavy, grayish-white in color, noncorroding precious metallic element, malleable and ductible, fusible with difficulty, resistant to most chemicals (dissolves slowly in aqua regia).

Symbol = Pt

Atomic No. = 78

Atomic Weight = 195.23

Specific Gravity = 21.45

Melting Point = 1755 C, or 3191 F

Has high electric resistance, expands slightly on heating, and is used for chemical apparatus, as a catalyst, for dental fillings, jewelry, etc.

(The chemical element) GOLD

--a yellow metallic element.

Symbol = Au (for Latin word, aurum)

Atomic No. = 79

Atomic Weight = 197.2

Specific Gravity = 19.3

--the most malleable and ductile of all the metals

Gold is 4 times more light sensitive than silver. At optimum, the speed gained by adding gold to a photographic emulsion is about 2-3 times. Sulfur must be added with the metallic element in the emulsion. Symbol for Sulfur = S. (Therefore, Gold + Sulfur, in symbolic form, is designated as "AuS"). In the photographic emulsion, AuS requires 4 quanta of light to make 10% of the grains developable. Sulfur alone requires 16 quanta of light to make the same 10% of grains developable. Gold therefore serves as a catalyst which greatly increases the speed sensitivity of the emulsion. Such latent images are highly resistant to bleaches (and such resistance is unaffected by delays of several hours between exposing and bleaching).

Gold + Palladium added to silver halide emulsions just prior to coating the substrate is done electrolytically. Selenium is added by the electrostatic process.



Macbeth  
Division of  
Kollmorgen Corporation

Little Britain Road, Drawer 950, Newburgh, New York 12550 • Tel: (914) 561-7300

February 25, 1977

Mr. Carl R. Mappes  
Star Route 3 - Box 223  
Kimberling City, MO 65686

Dear Mr. Mappes:

Although I am no longer an officer of the Society of Photographic Scientists and Engineers, the Executive Secretary still follows the line of least resistance and sends me copies of inquiries such as your question about an old photographic process.

Take a plate of copper. Electrodeposit silver on the copper. Polish the silver so that it is a good mirror surface. Expose it to iodine or bromine gas to form a very thin deposit of silver iodide or silver bromide. Expose this plate in a camera and develop it by exposing it to mercury fumes. It is possible to tone the resulting image with gold or platinum. The image is very permanent if it is protected from abrasion. For this reason, it is customarily mounted under glass. It is called a Daguerrotype. It was described by Daguerre in 1839. This process was used all over the Western world from 1839 to about 1859. Most of the pictures were somewhat smaller than the size you describe, but they did make them as large as that and even larger.

The tone of your letter reflects exasperation which is probably attributable to the fact that a beautiful photographic process widely used by artistic photographers in the first quarter of this century was called the platinum process. Understandably, people thought you were talking about that process or some other toning process for paper prints.

Since I have not seen the photographs to which you refer, I cannot be sure that they are Daguerrotypes, but in all probability that is what they were. The valuation you place on them would be about right if they were still in good condition.

See: "The History and Practice of the Art of Photography" by Henry H. Snelling (originally published in 1849) republished by Morgan & Morgan Publishers, Hastings-on-Hudson, New York, in 1970.



Mr. Carl R. Mappes

February 25, 1977  
Page Two

I know of no one currently providing materials for this obsolete process.

Very truly yours,

C. S. McCamy  
Vice President, Science  
and Technology

CSM/jd

cc: H. Hall  
B. Levy  
R. Mason  
R. Wood