

Researching historical print archives to  
integrate 'found' knowledge into post-  
digital printmaking workshops



Test proof large format photogravure

This lecture will concern research into historical print archives/institutions as well as other relevant archives.

I have for the past 25 years researched old photomechanical processes where my main focus has been especially photogravure or heliogravure on copper. I have also researched photoetching & collotype

The photogravure process invented in the 19<sup>th</sup> century is a photomechanical process

whereby a continuous tone image is etched into a copperplate & when printed produces the full range of greyscale from black to white.

The photogravure process is one of the most complex within the field of photomechanical processes/techniques within intaglio printmaking

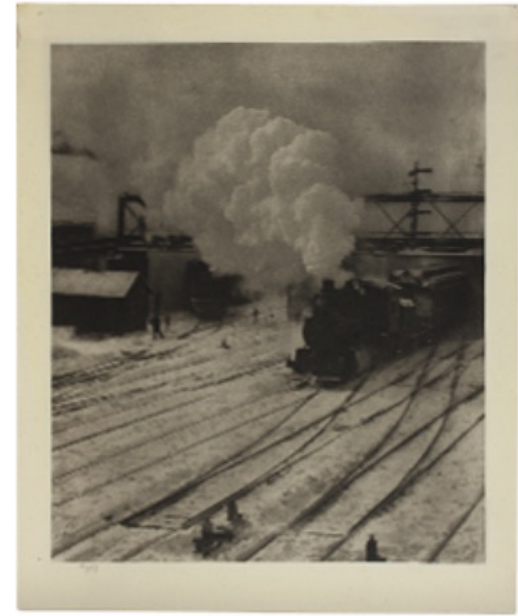
For those of you who does not know what a photogravure looks like, here is a quick run through with some images of photogravures all these examples are etched on copper



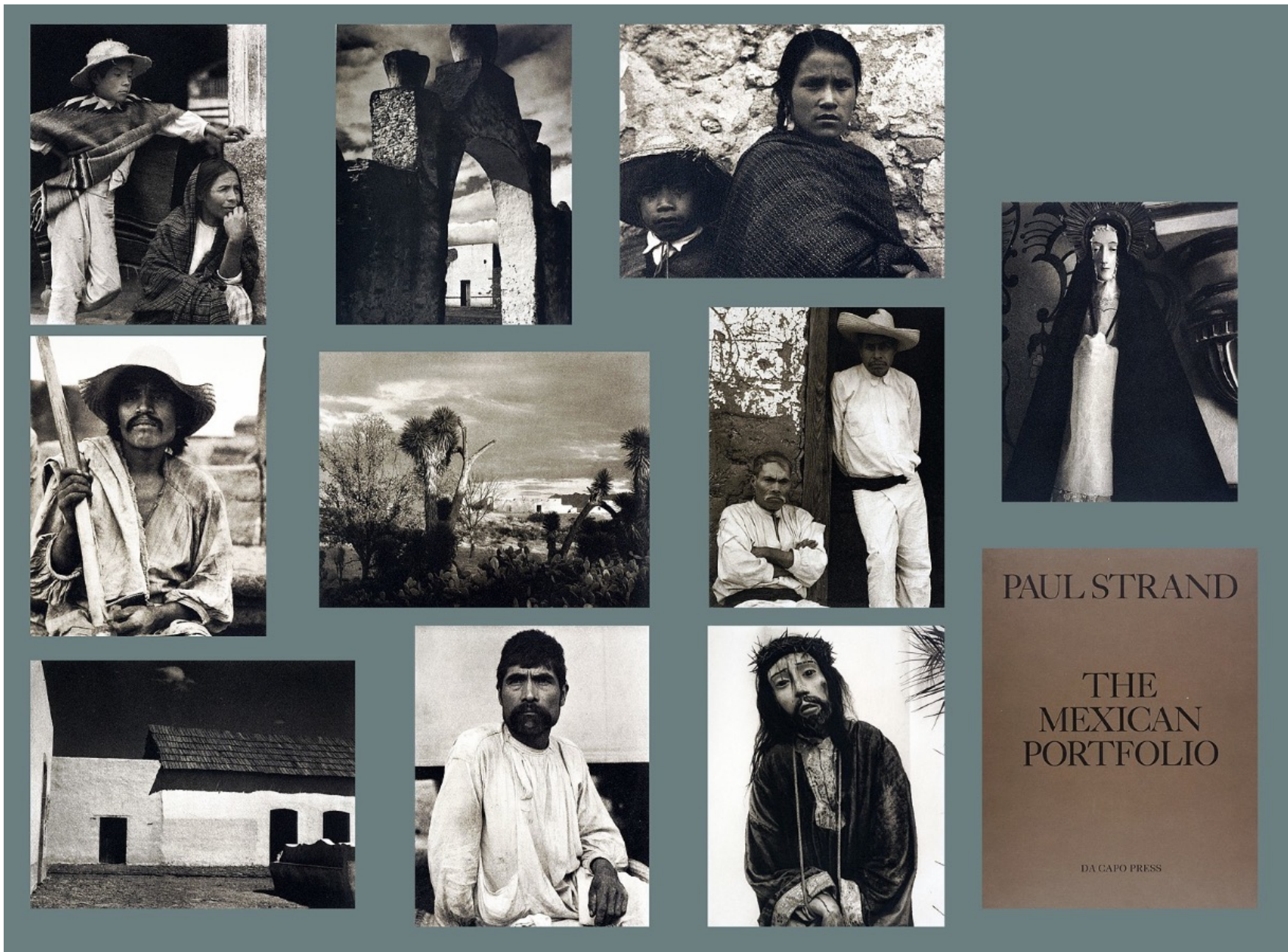
Classical photogravure reproductions on copper made by printing houses for the public



Edward S. Curtis, Epic project *The North American Indian* , photogravure on copper



Alfred Steiglitz photogravures on copper used in among other Camera Works & Camera Notes



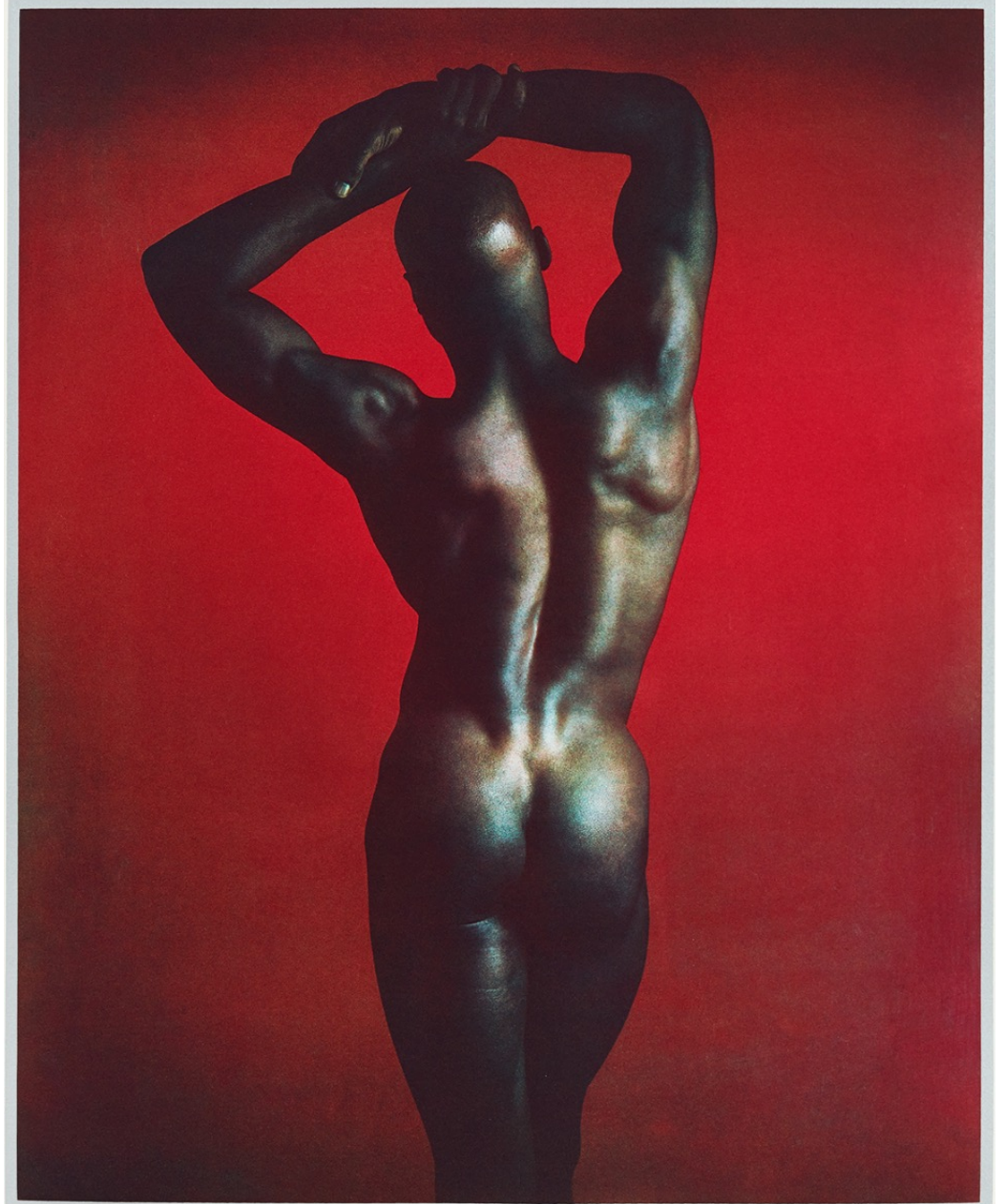
Paul Strand the Mexican portfolio also an epic photogravure project, photogravures on copper



Edward Steichen, photogravures on copper



Robert Mapplethorpe, *Orchid* B & W photogravure



*Untitled #1* from the *Ken Moody Portfolio 3* color photogravure

*Produced by Graphic Studio a famous Print studio in Tampa, Florida, USA*



MA exam Project 2018, Department for Print Oslo  
National Academy of Arts Lucia Aragon  
direct gravure on copper



"Khu bird"



"Su persona"

MA exam project  
2019

Department for  
Print Oslo  
National  
Academy of Arts

No Name  
Woman

By  
Cathrine Liberg

Consisting of 7  
Photogravures on  
copper



The Wealthy Consort



The Sarong Kebaya

# Masters of the Classics



Masters of the Classics, a project with 14, 4 color photogravures on copper, by Jan Pettersson



Photogravure Edition Stefan von Böös  
PL. II

Dame de la cour de Milan  
Léonard de Vinci 1452 - 1519

Tirage par Jan Petterson



Photogravure Edition Stefan von Böös

PL. XI

Le tricheur  
La Tour, 1593 - 1652

Tirage par Jan Petterson



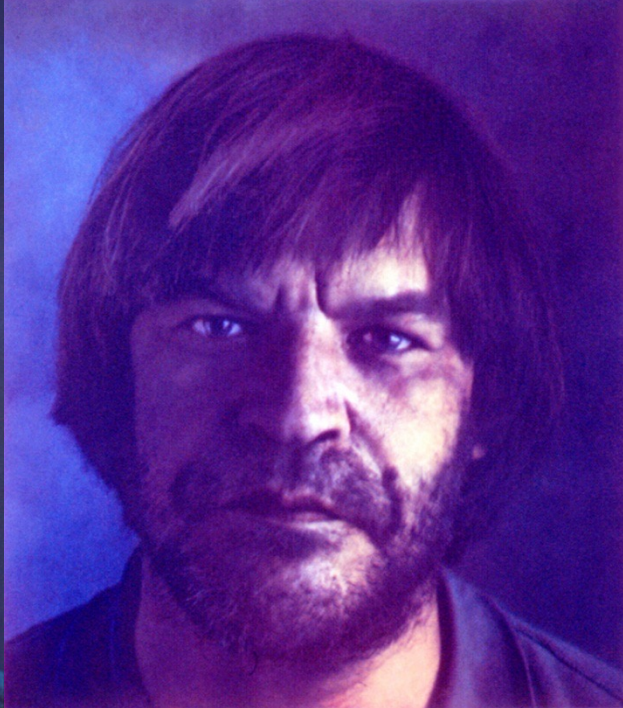
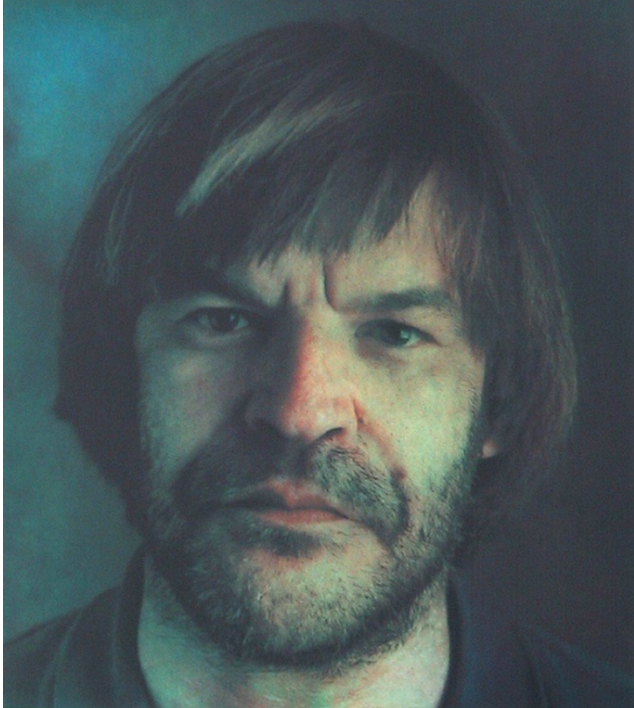
Photogravure Edition Stefan von Böös  
PL. IV

Bildnis einer jungen Frau  
Petrus Christus, um 1410 - 1472/73

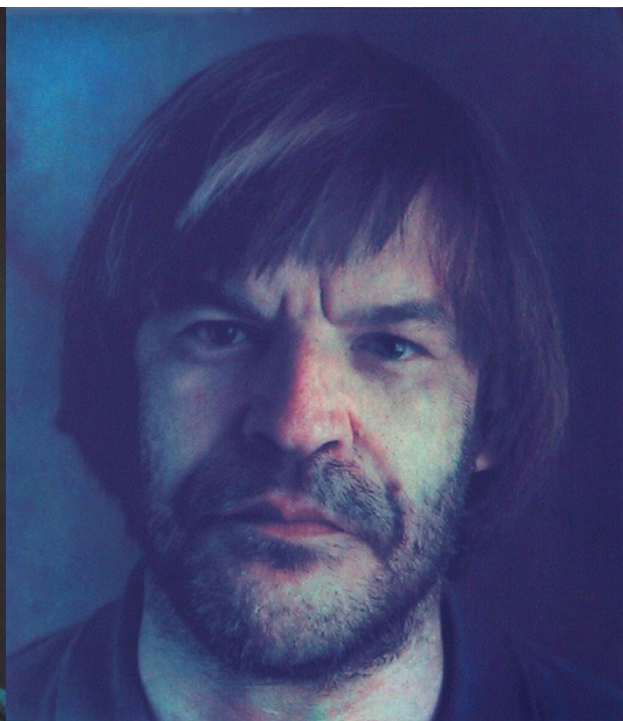
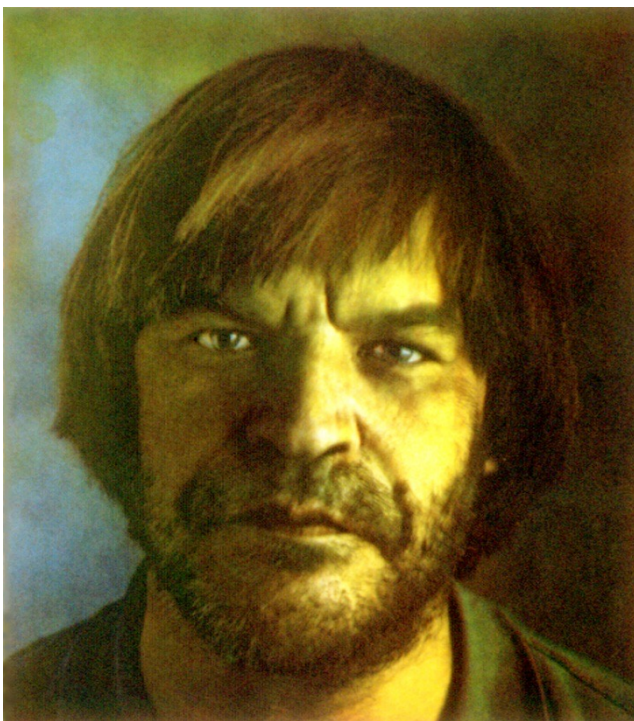
Tirage par Jan Petterson



**The True Lasse, an installation with 60, 4-6 color photogravures on copper, by Jan Pettersson**



**The True Lasse**



The types of Archives I have researched are, Museums, collections, libraries, human archives i.e. persons with knowledge, internet archives & archives that re-cycle history i.e. flea markets. Each of these archives play an important role in my research and the use of collected information or acquired objects as books, plates & prints.

Why would you then consider researching these archives & what would come out of it & how could it be used in a contemporary context in teaching workshops.

Part I  
Already executed research in archives

The first visit started with the Print Department at MOMA New York in 1995





MOMA contains holdings of prints, illustrated books, and multiples include more than 60,000 works, comprising the world's most extensive collection of modern and contemporary prints and illustrated books.



Here time was spent researching Thomas Annans book of The Old Closes and Streets of Glasgow printed with photogravure



& going through Edward S. Curtis, Epic project *The North American Indian*



Paris, Bibliotheque National in 2002 & 2021

Richelieu Library - Prints and Photography Reading Room

<https://www.bnf.fr/en/richelieu-library-prints-and-photography-reading-room>

The Department of Prints and Photography owns over 15 million iconographic documents of all types: drawings, - mostly architectural - prints, photographs, posters, labels, postcards, fabric samples, playing cards etc. When I visited 20 years ago & I had to spend 1 day selecting all the prints that I wanted, order them & come back the next day and go through the selection and make the choice of which prints I needed for the research as illustrations in the publication. Today you can research the data base beforehand & talk to a librarian online so that you can order what you would like to see or read.



Fig. 5. *Le vin nouveau*, photogravure by Goupil & Cie. Courtesy of BnF.

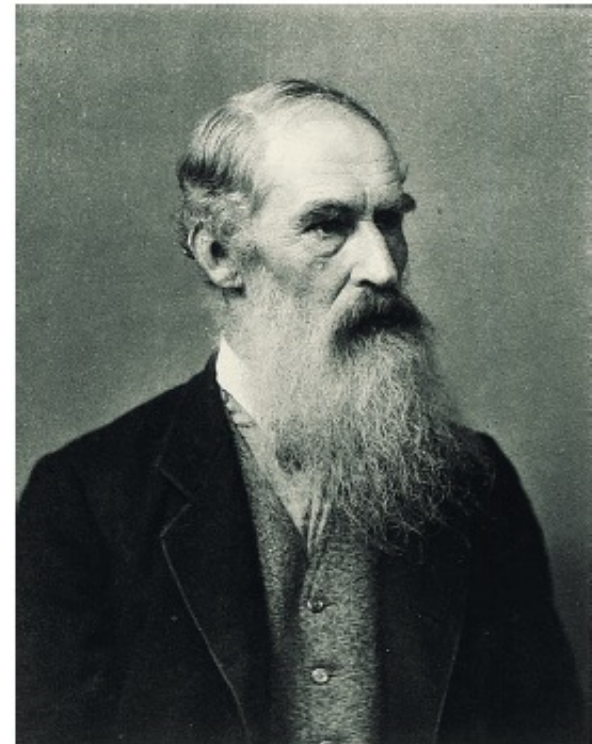


Fig. 6. *Untitled*, photogravure by Goupil & Cie. Courtesy of BnF.

## Preus Photomuseum in Horten Norway 2002

The Preus Museum presents the breadth of photography and covers the artistic, cultural-historical and technical aspects. The museum also has a specialist library of international standard. Here it was much easier to achieve good research as you could contact the librarian & ask for the prints that you wanted to see. I spent 3 days looking at their collection of Edward Curtis prints from the North American Indian, prints by Edward Steichen & issues of Camera work & Camera notes that Steiglitz published, parts of the Mexican portfolio by Paul Strand, Craig Annan, A # of these were selected as illustrations for my publication. Their library was of very high standard especially concerning technical literature on photography & photographic /photomechanical processes.

Here are some photogravures I selected



Preus Library , Horten, Norway



Fig. 16. Alvin Langdon Coburn,  
*Paddington Canal*, 1908. Courtesy of  
Preus Museum, Horten, Norway.



Fig. 12 B. James Craig Annan,  
*Les frères blancs*, 1899. Courtesy of Preus  
Museum, Horten, Norway.



Fig. 11. Alfred Stieglitz,  
*The Letter Box*. Courtesy of Preus  
Museum, Horten, Norway

Musee Goupil, Bordeaux, France , in 2002

The Goupil collection is unique in the world it contains the collections of the House of Goupil, a dynasty of art publishers and international gallery owners based in Paris who were active from 1827 to 1920

The Goupil collections consist of 70,000 photographs, 46,000 prints, 7200 matrices consisting of engraved copperplates, lithographic stones, typogravure & chromotypogravure blocks (i.e. photo relief blocks), & glass negatives and one thousand books and illustrated reviews. Here I found some fantastic colour photogravures done with a la poupée A # of these were selected as illustrations for my publication.







Fig. 3. G .H. Boughton, *Love in Winter*, photogravure by Goupil & Cie. Courtesy of Musée Goupil, Bordeaux, France.



Fig. 4. N. Lund, *The Heart of the Empire*, photogravure by Goupil & Cie. Courtesy of Musée Goupil, Bordeaux, France

## Findings at archives that re-cycle history i.e. flea markets

- Here is an example of a relief printing plate used in typography . The photographic emulsion is still on the surface.





PHOTOGRAVURE GOUPIL & C<sup>ie</sup>

PL. XIV

Photogravures by Goupil & Cie & George Petite

Keyser (Thomas de)



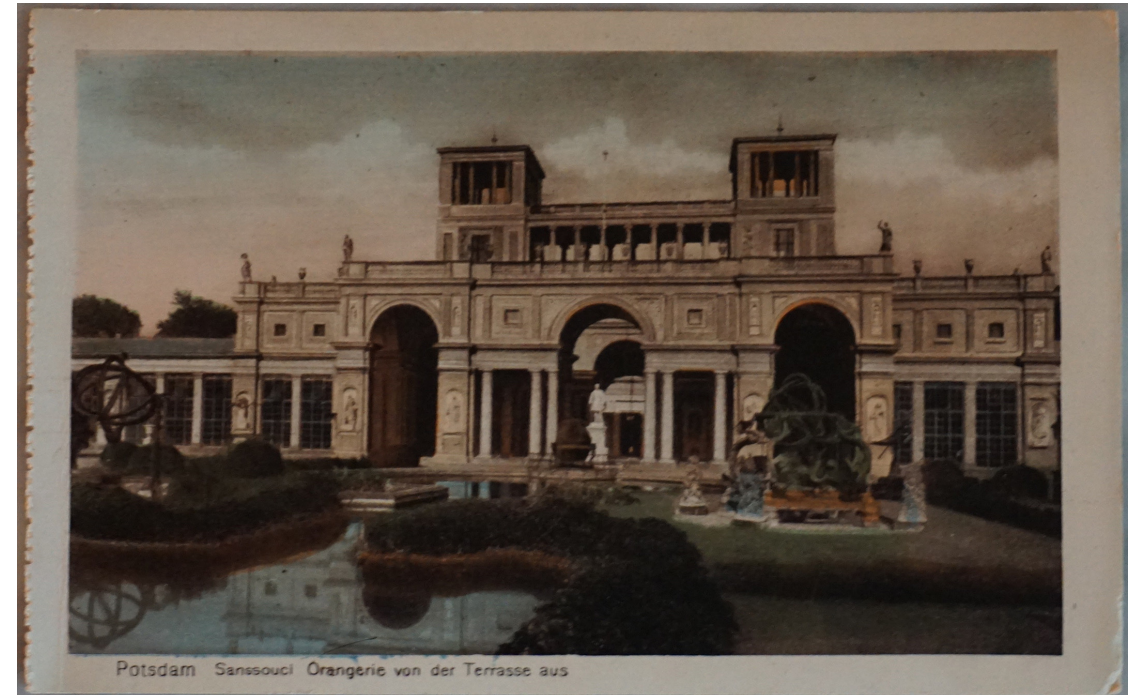
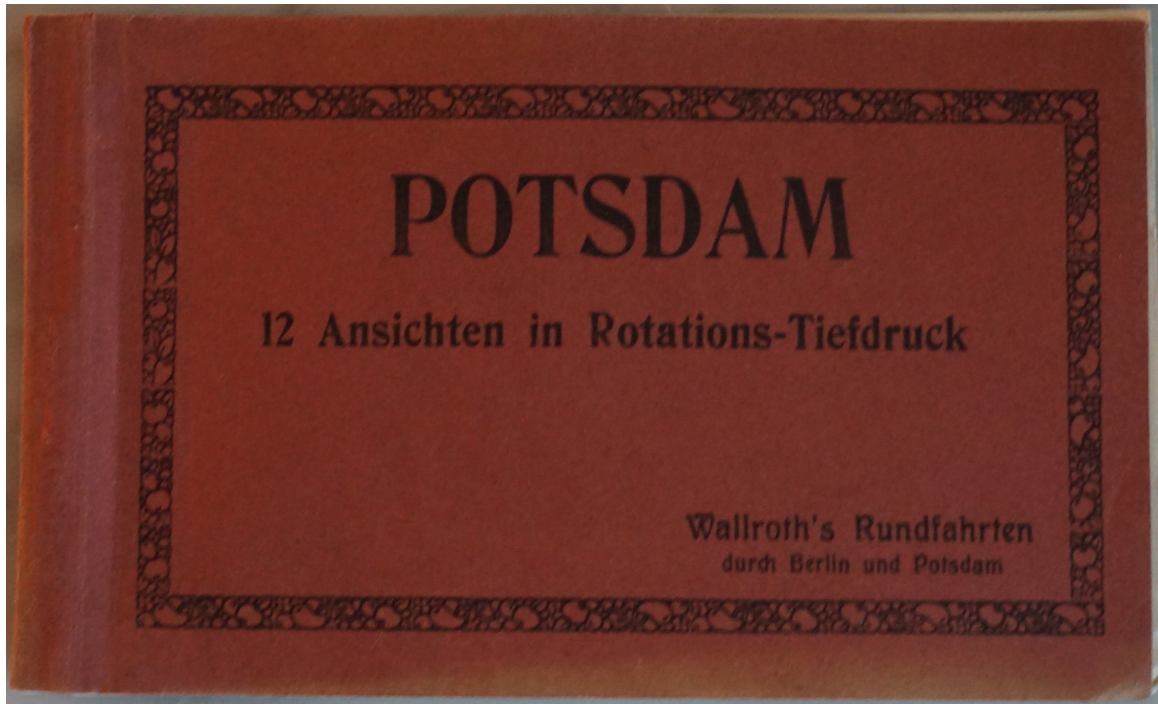
Peinture de Long Campen (1665)

*Famille hollandaise*

1 set of rotogravure prints printed with blue ink from around 1907



1 set of rotogravure prints printed in 4 color from around 1910



In conjunction with this a number of human archives were visited & interviews were executed with wellknown photogravurists as Jon Godman in Massachusetts, Deli Sacilotto & Paul Taylor in New York, Johan de Zoete in Amsterdam & Lasse Mellberg in Sweden.

The collected information from these visits & interviews together with already acquired & grounded knowledge was accumulated in my 1<sup>st</sup> publication Photogravure an Archaeological Research in 2007 & re- contextualized thoughts on the expanded field of print was put forward in the publication Printmaking in the Expanded field 2017

PHOTOGRAVURE

An Archaeological Research

By  
Jan Petterson  
2007

PRINTMAKING  
IN THE  
EXPANDED  
FIELD

A pocketbook for the future  
Collected texts and thoughts  
Ed. Jan Petterson

## Bringing students into the research

- I think that one of the key issues in research and to create an understanding among the students for what research is and can be is to implement it into the education where students are invited in to participate and help execute assignments within the research.
- This will further the understanding within the student group and also train students in an approach concerning research that they will benefit from further down the line.
- It will also be important in the further development of the subject area in the form of possible future Phd candidates & teaching staff.



Aquired knowledge is put into workshops, publications and used in the education of students focusing on Print at Department for Print at Oslo National Academy of the Arts.

Here are some images from the photogravure club that I run at Department for Print

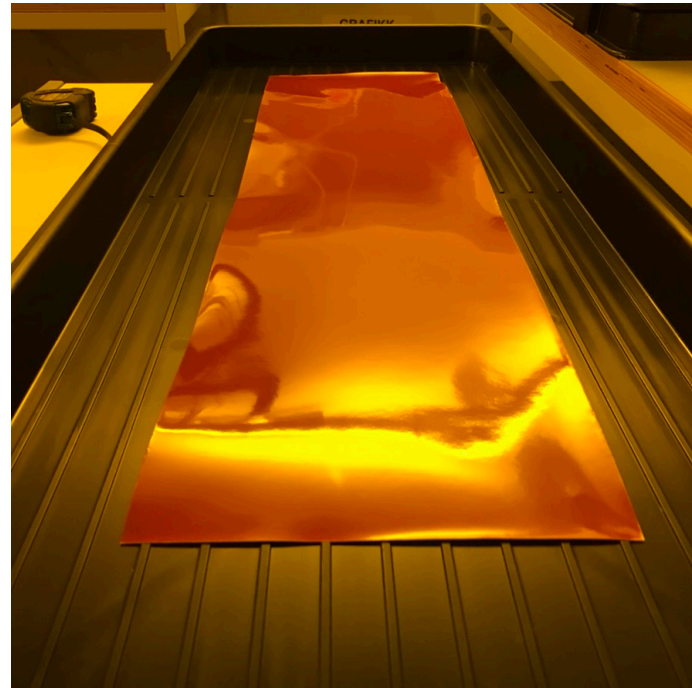
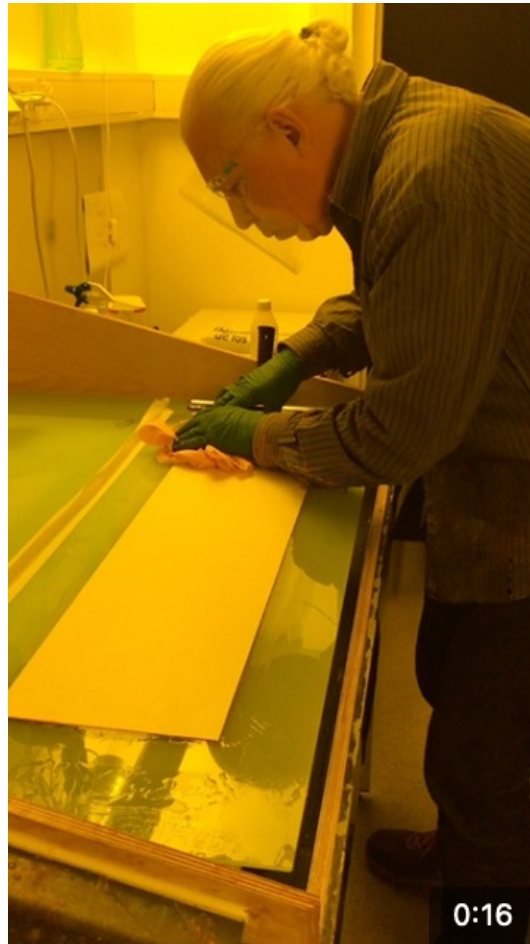
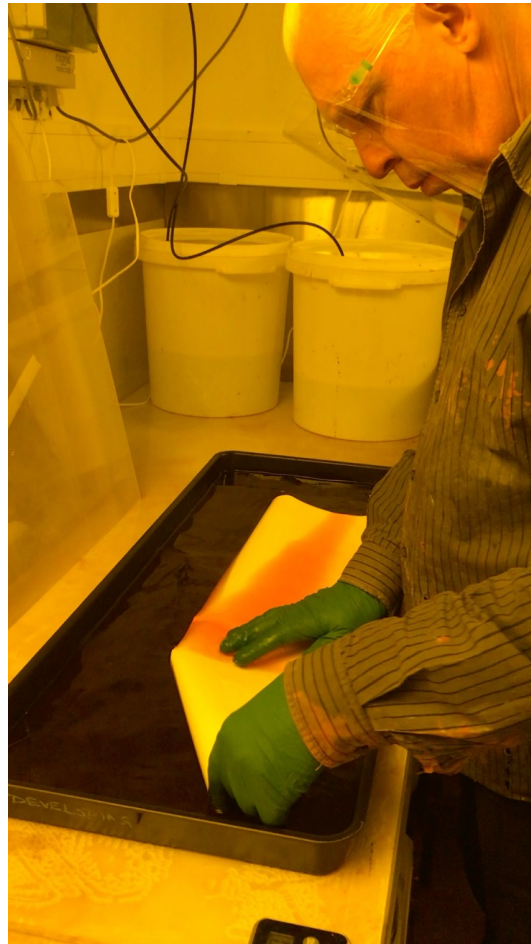
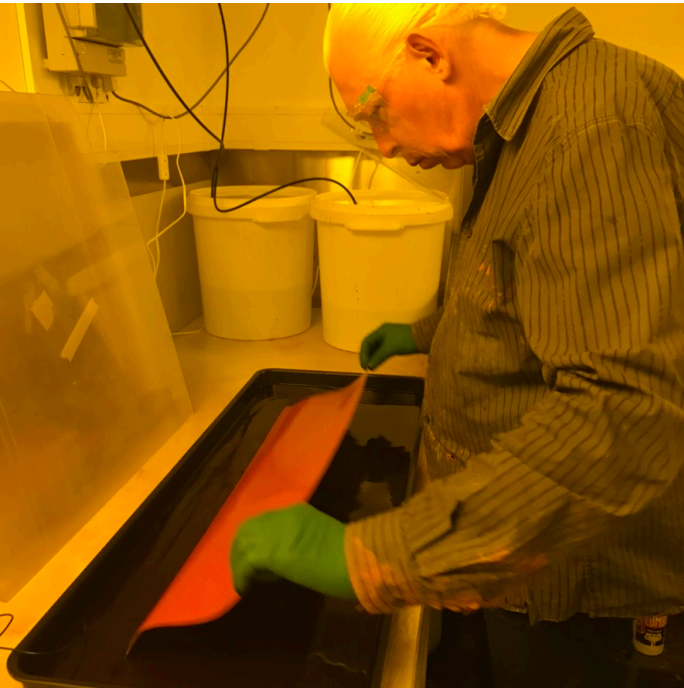


Working with the Photogravure club at Oslo National Academy of the Arts, Department of Print in the photomechanical process rooms.

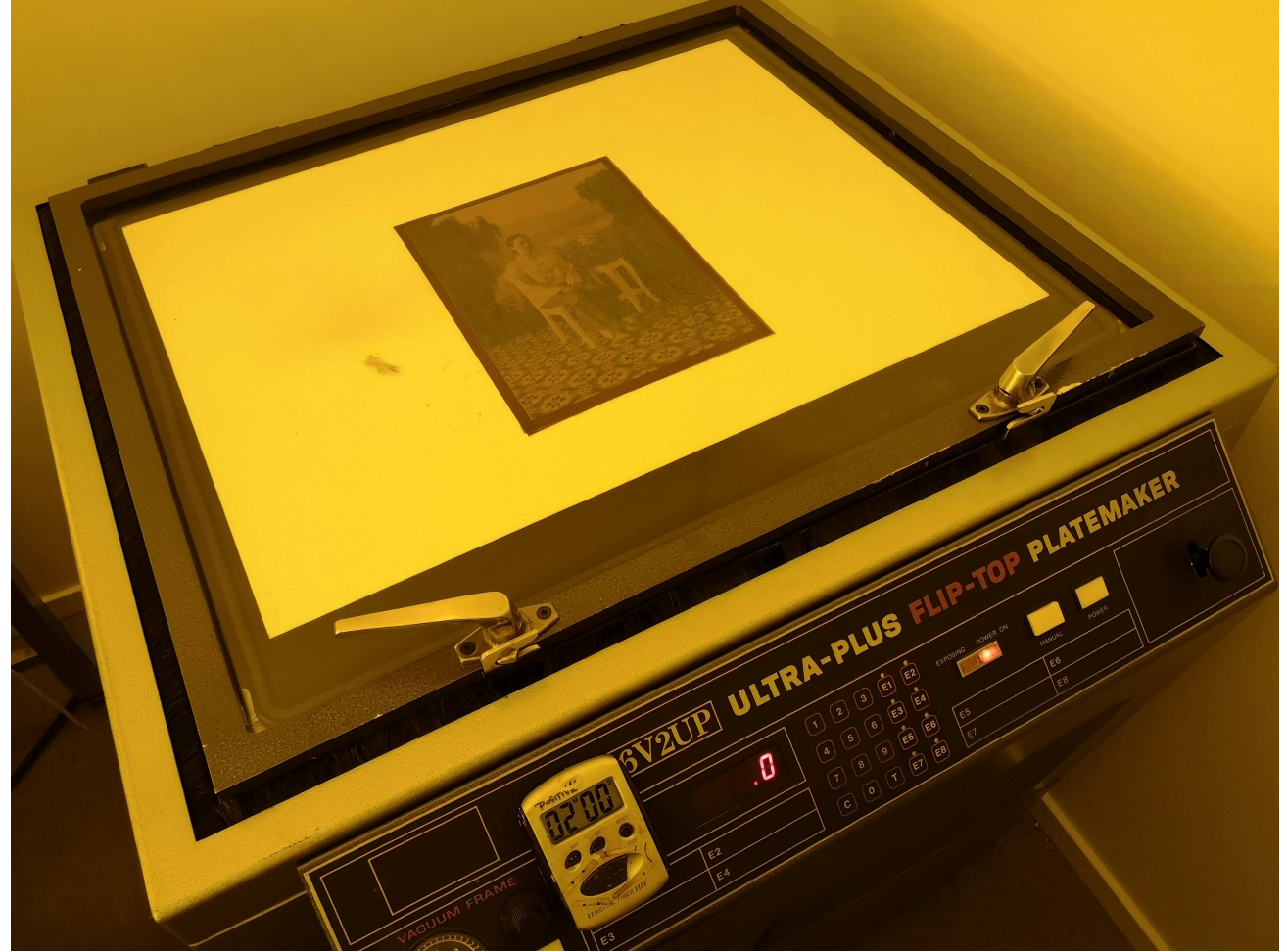
The club consist of a mix of students on BA, MA & PhD level, teachers & technicians



Mixing the Dichromat solution for sensitizing the pigment paper

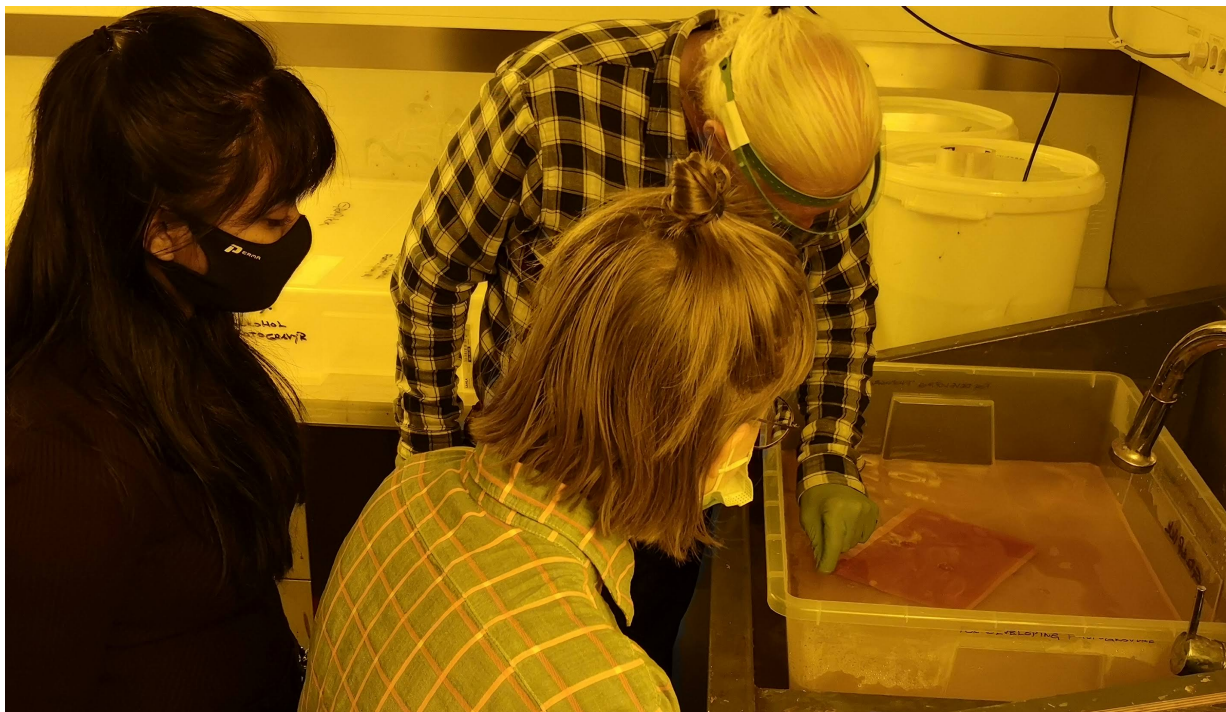
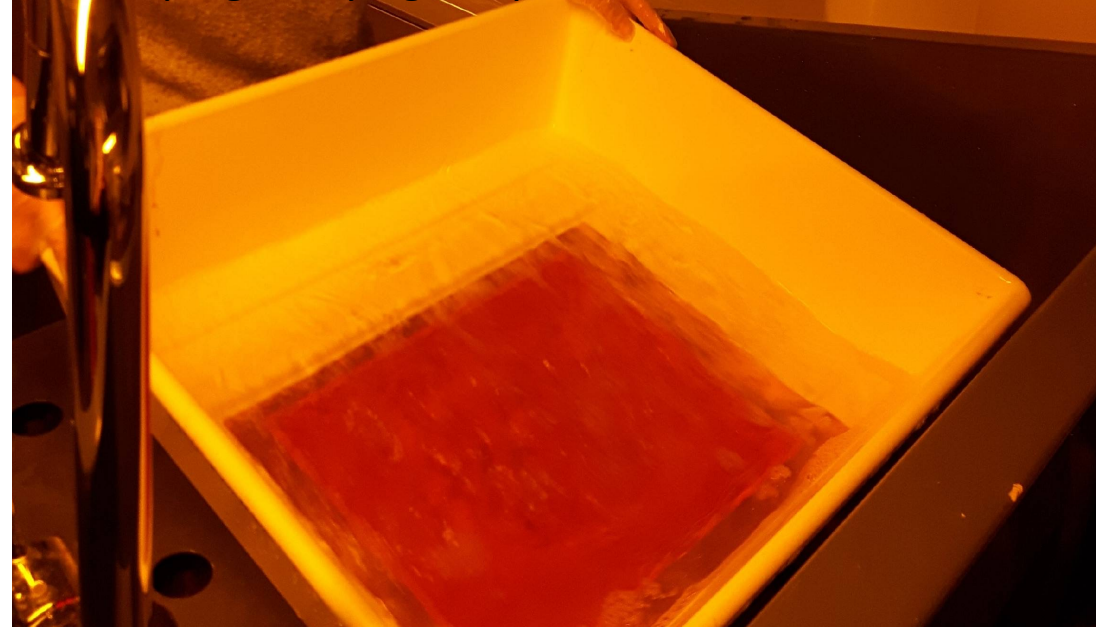
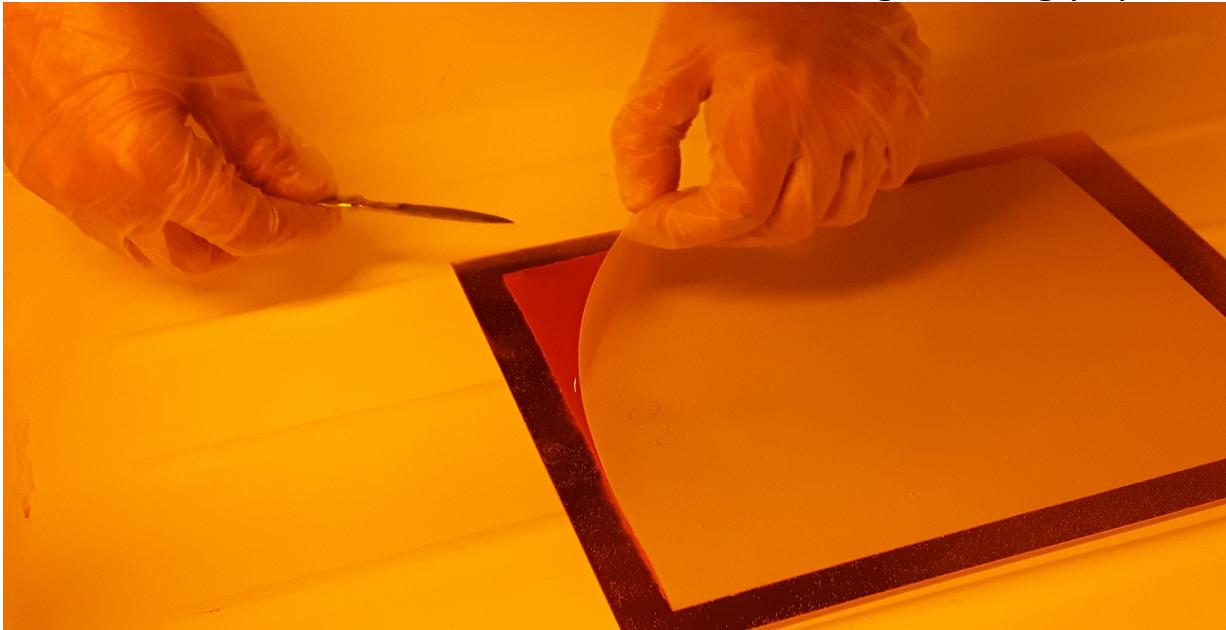


From Left to right sensitising pigmentpaper, laying it down on plexiglass, dried pigmentpaper ready for exposure



Exposing the sensitized pigmentpaper  
in a vaccum frame

Removing backing paper after laydown, developing & drying the plate



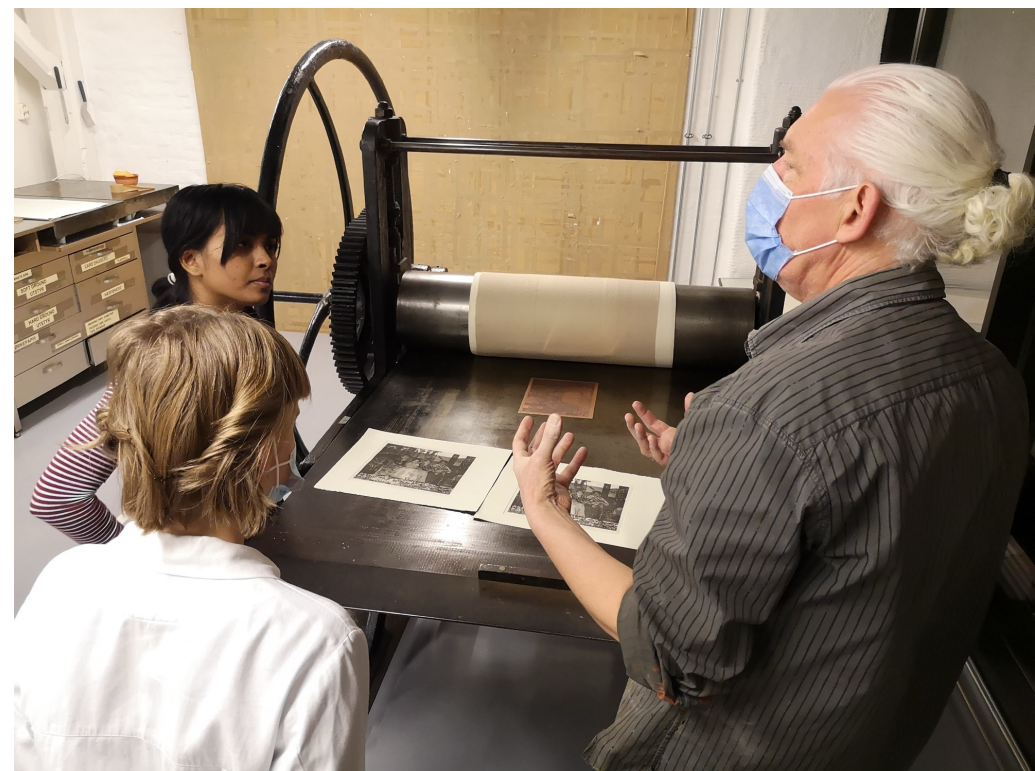


Prepping  
&  
etching plates





Cleaning plate after etch  
then polishing, checking  
& printing



Here are some results from the photogravure club spring/fall semester 2022



4 color photogravures by Ragnhild Tokvam BA 2 at Print







The Positive



The Plate



The Photogravure Print

B & W photogravure by Professor Theodor Barth, Design



B & W & 4 color photogravures by Rajat Mondal MA 1 student at Print



B & W & 4 color photogravures by Vibeke O'Rourke, Technician in Print & Publishing at Print

Current research

Working title

***The placement of the photogravure process and its historical/technical presence as a tool  
for contemporary mnemonic re-enactment of a process***

*"One can provide instructions on techniques and discussion of concept but if there is a diminished  
importance placed on the object or image one will not be able to fully understand why"*

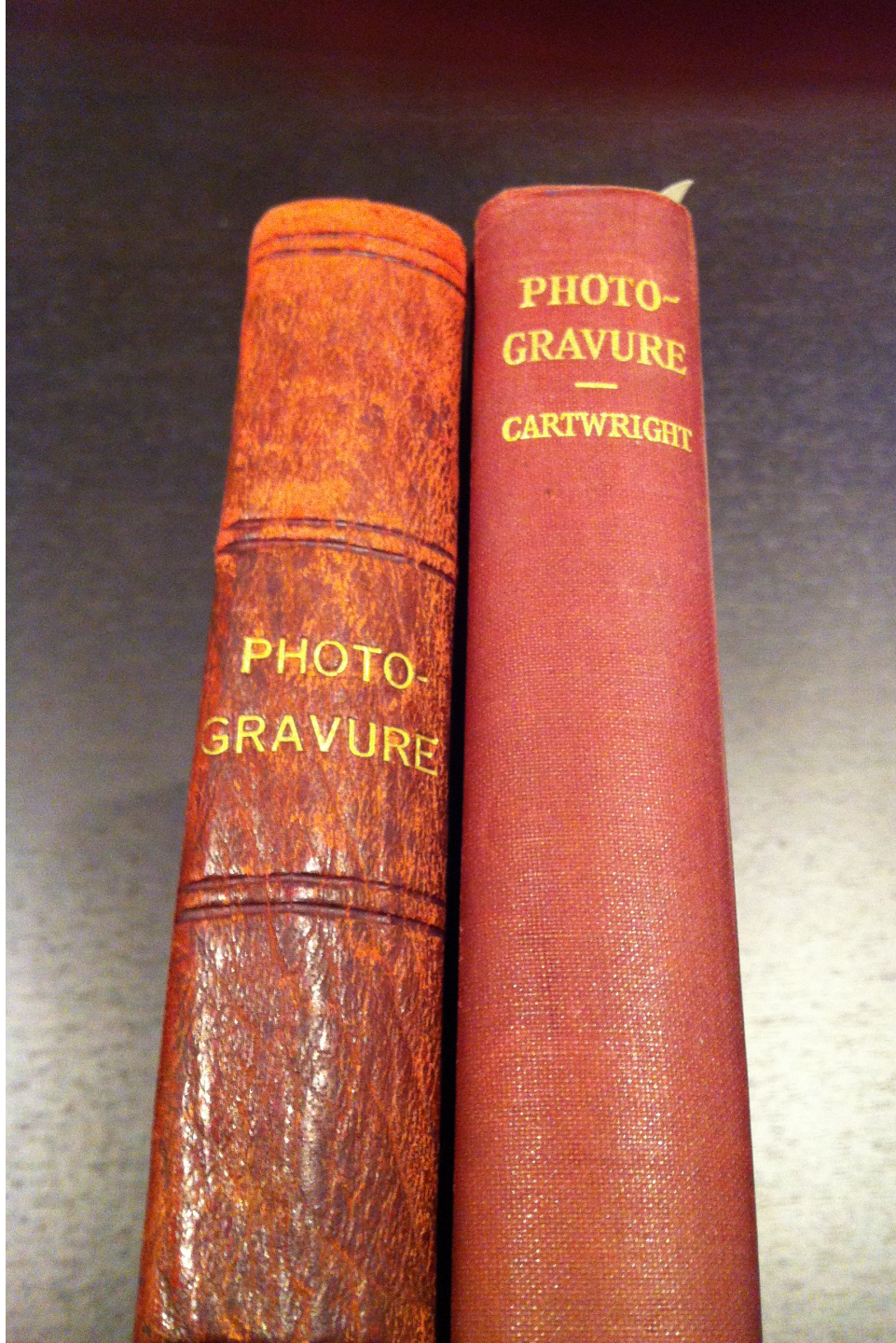
My goal is through, acquired knowledge, my previous research, in combination with other approaches, appropriated techniques, coded information, in collaboration with Master Printers and Technicians, by the accessibility of old/new books concerning the photogravure process, other photomechanical processes and the current technology of today be able to further develop the media within its proposed framework of research.



Especially old books used in the printing industry is of invaluable help since they with the at that time analogue approach to printing are the base that the new digital technology developed from.

With Ebay & Amazon certain books that were only available in libraries, second hand book stores & privately owned have now surfaced on the internet.

for example this book that is of great importance

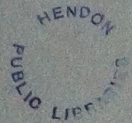


Cartwrights book Photogravure published in 1930 with an updated edition in 1939 points to relevant information that can be transferred and re-worked in the contemporary setting of my research.

# PHOTOGRAVURE

*A Text Book on the Machine  
and Hand Printed Processes*

BY  
H. MILLS CARTWRIGHT, F.R.P.S.



BOSTON  
AMERICAN PHOTOGRAPHIC PUBLISHING CO.,  
1930

# PHOTOGRAVURE

*A Text Book on the Machine  
and Hand-Printed Processes*

BY  
H. MILLS CARTWRIGHT, F.R.P.S.

SECOND EDITION  
*Revised and Enlarged*



BOSTON  
AMERICAN PHOTOGRAPHIC PUBLISHING CO.,  
1939

These 2 editions has been gone through thouroughly to compaire the at that time development of the process within in a 9 year time span.

Were the approach of reading 2 books simultaneously to be able to compaire and filter out the difference is important for the reasearch.



## CONTENTS

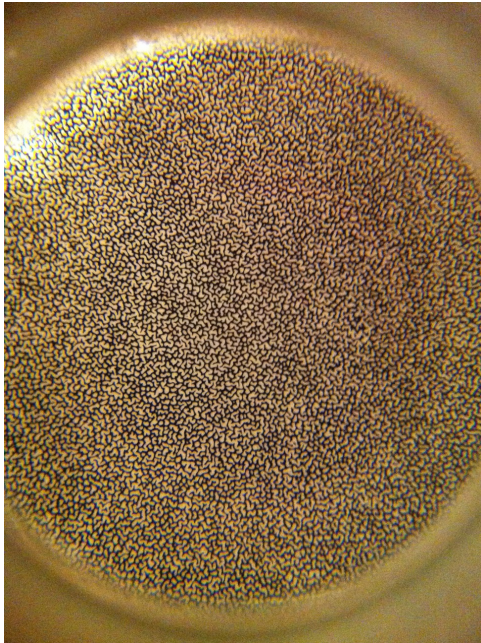
	PAGE
FOREWORD . . . . .	v
CONTENTS . . . . .	vii
LIST OF ILLUSTRATIONS . . . . .	ix
INTRODUCTION — WHAT IS PHOTOGRAVURE — Advantages and Limitations — Colour Photogravure — Outline of Machine Gravure — Hand Printed Photogravure . . . . .	xi
CHAPTER I — PREPARATION OF ORIGINALS — Line Originals — Bromide Prints and Wash-Drawings — Grouping — Type Matter — Lay-out Scheme . . . . .	1
CHAPTER II — PHOTOGRAPHIC OPERATIONS — Illumination of the Original — Safe-Lights — Reversed Positives — Copying Line Originals — Black and White Originals — Coloured Originals — Tri-Colour Negatives — Positive Making — Photographic Density . . . . .	5
CHAPTER III — RETOUCHING NEGATIVES AND POSITIVES — The Use of Matt-varnish and the Air-brush — Colour Corrections — Assembling Positives and Type-matter . . . . .	21
CHAPTER IV — COPPER PLATES AND CYLINDERS — Flat Plates for Hand Printing — Plates for Rotary Machines — Copper Cylinders — Electro-deposition of Copper — Causes of Defective Deposits — Grinding and Polishing — Grinding after Etching — Method of Handling Cylinders . . . . .	28

## CONTENTS

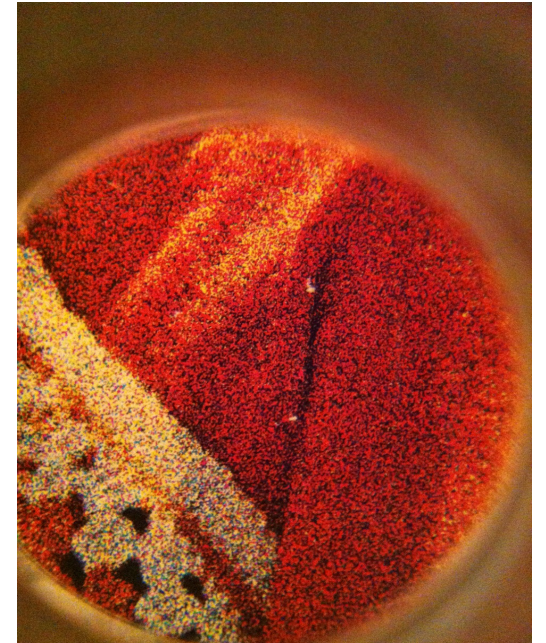
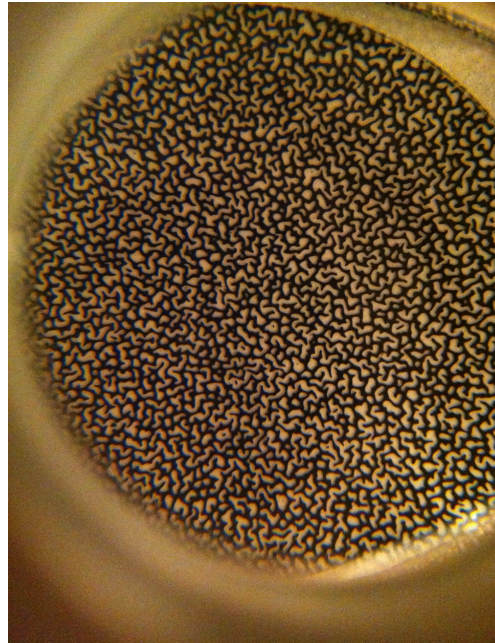
CHAPTER	PAGE
FOREWORD TO THE FIRST EDITION . . . . .	v
PREFACE TO THE SECOND EDITION . . . . .	vi
INTRODUCTION . . . . .	xi
I. PREPARATION OF ORIGINALS . . . . .	1
II. PREPARATION OF THE LAYOUT . . . . .	5
III. THE PHOTOGRAPHIC STUDIO . . . . .	8
IV. PHOTOGRAPHIC OPERATIONS . . . . .	16
V. LINE NEGATIVE MAKING . . . . .	25
VI. CONTINUOUS-TONE NEGATIVES . . . . .	30
VII. POSITIVE MAKING . . . . .	36
VIII. TYPE REPRODUCTION . . . . .	40
IX. RETOUCHING NEGATIVES AND POSITIVES . . . . .	44
X. PLANNING . . . . .	51
XI. COPPER CYLINDERS AND PLATES . . . . .	54
XII. CARBON TISSUE . . . . .	62
XIII. SENSITIZING CARBON TISSUE . . . . .	67
XIV. SCREENING THE TISSUE . . . . .	76
XV. PRINTING FROM THE POSITIVES . . . . .	82
XVI. MOUNTING AND DEVELOPING THE CARBON PRINT . . . . .	86
XVII. DEFECTS IN CARBON RESISTS . . . . .	95
XVIII. GENERAL PRINCIPLES OF ETCHING . . . . .	100
XIX. PREPARATION OF THE ETCHING BATHS . . . . .	107
XX. PRACTICAL ETCHING . . . . .	111

Just by looking at the content pages of the 2 books you can see the difference.

With the starting point in Cartwrights writing & the the information aquiered I am now working with part 2 in the development of large size photogravures for color & B & W using different types of coarse & fine screens



Close up of mezzotint screens photographed through a magnifier with my Iphone



Example of 4 colour work using these screens

Tests done in part II;

Large size photogravures, Etching & printing a section of the image to gradually determine the maximum size possible. 2 test plates were made image size 12 x 50 cm, 2 different stochastic screen types were used. I am currently working on the last & final test size for a plate 80 x 100 cm

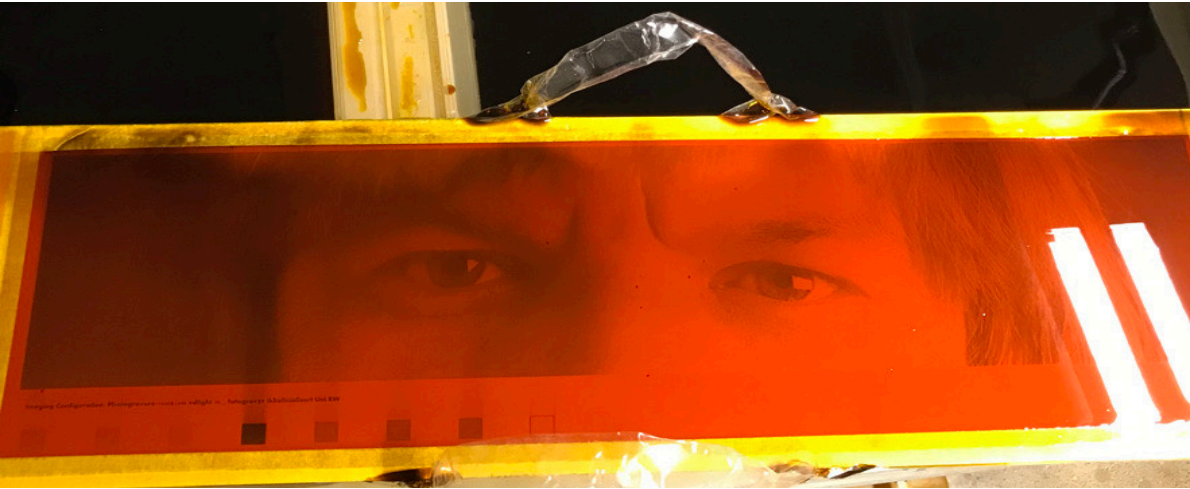
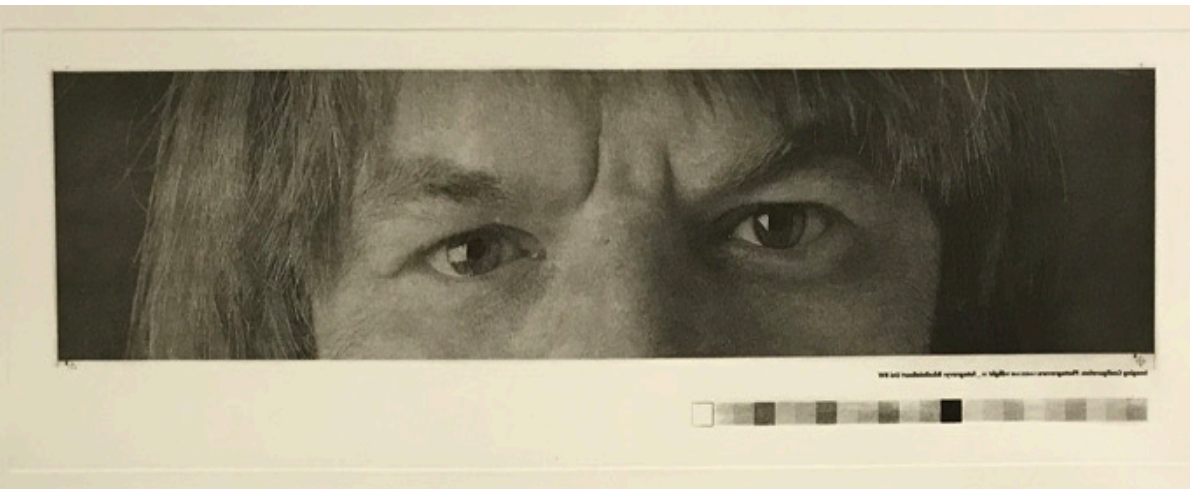


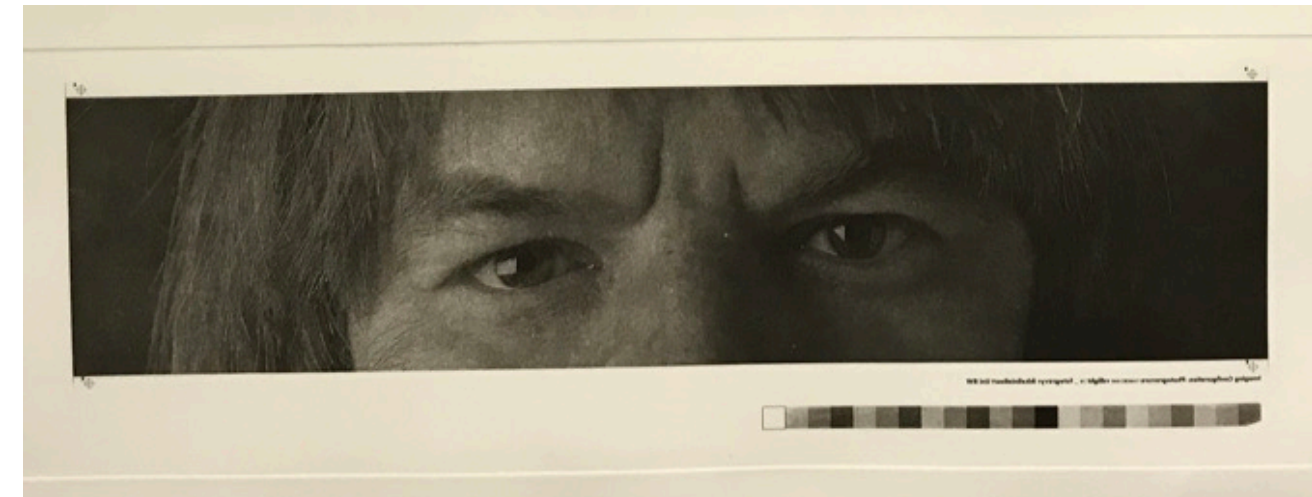
Plate etching



Plate inked ready to print



Test 1 printed using snake screen



Test 2 printed using stochastic polymer screen medium

- For this the 2<sup>nd</sup> part of the research I have visited the following Institutions



## London, St Brides library 2020

At the heart of St Brides is an extraordinary archive relating to printing, publishing and graphic design. With over 100,000 items, the library is probably the largest of its kind in the world and is regularly open to view.

I visited it march 11<sup>th</sup> 2020 just before the Covid 19 pandemic breakout & the shut down of Europe. Before going there I had selected online a # of books & catalogues all related to photogravure;

Here is the list I selected & some sample of what I looked at.



## • **Selected Books from St Brides Library**

- **Photogravure for advanced students.** Dawson, Charles Edwin. In: Inland printer, vol. 42 (1908) CLOSED ACCESS
- **Sensitizing pigment papers for photogravure.** Burton, H. J. In: Penrose's pictorial annual, vol. 1 (1895) CLOSED ACCESS
- **Devils in photogravure.** Wilkinson, W. T. In: Penrose's pictorial annual, vol. 11 (1905-1906) CLOSED ACCESS
- **Photogravure with a screen grain.** Wilmer, H. In: Penrose's pictorial annual, vol. 5 (1899) CLOSED ACCESS
- **Photogravure with metzograph screen, high light processes, etc..** Wood, J. G. In: Penrose's pictorial annual, vol. 12 (1906-1907) CLOSED ACCESS
- **Colour photogravure.** Thevoz, Fred. In: Penrose's annual, (1926) CLOSED ACCESS
- **Photogravure reproductions of oil paintings by the Hanfstaengl process.** Hanfstaengl, F. London, 1894 Accession Number: 10853 CLOSED ACCESS BOX AL
- **Autotype photogravure pigment papers.** Notes and working instructions in English, Française, Deutsch, Espanol. Autotype Company. London, Accession Number: 28658 CLOSED ACCESS YL4
- **Colour photogravure** / Cartwright, Herbert Mills. Bournemouth, 1936 Accession Number: 27407 CLOSED ACCESS BOX DL
- **Printing photogravure in colour.** Horgan, Stephen H. In: Inland printer, vol. 42, no. 3 (Dec. 1908) CLOSED ACCESS
- **Guide for photogravure engraving** / Greaves, Wilfred. Leeds :Photogravure Supplies Ltd., 1929m Accession Number: 26417 CLOSED ACCESS BOX 254

- As you can see these are all books from the end of the 19th & the beginning of the 20th century

Photo-Engravers' Beveller.

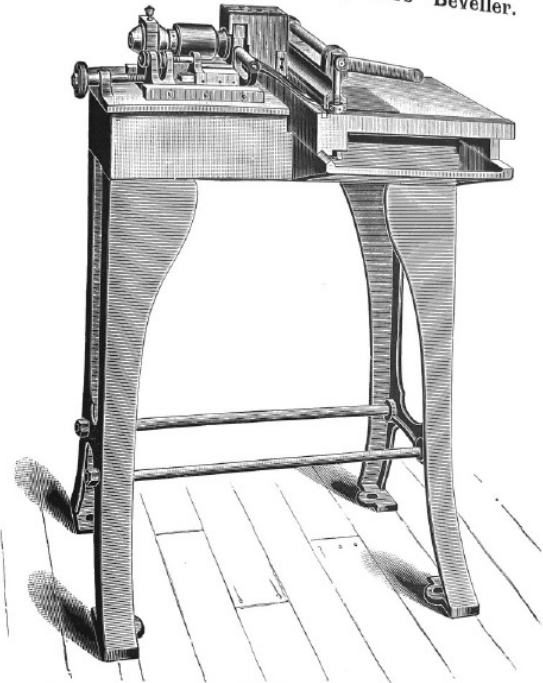


Fig. 168.

While this machine can be used for bevelling electrotype and stereotype book plates, it is especially adapted for bevelling the edges of copper and zinc engravings. For this purpose it possesses numerous advantages over all others. The cutter head, which is of steel, is placed in such a position that the cut can be made in any desired part of the plate, and therefore, if desired, that portion of the plate outside the design can be allowed to remain, and act as a bearer, enabling the prover to obtain the best possible proof, yet being so deeply cut outside the bevel that the waste margin can afterwards be snapped off with the fingers. The plate is clamped on a strip of hard wood, set in the bed in such a manner that it will last for months, and can be quickly reversed or a new one substituted. This allows of tight clamping, and obviates all risk of

either spoiling the cutter or running into the table. The top clamp works instantaneously by means of eccentrics, and clamps the plate the entire length, close to the path of the cutter, without injuring the face of the most delicate cut. This does away with chattering and slipping, so that the machine can be run at a very high speed. A raising gauge is provided, by means of which the operator can accurately set and clamp his work, and thus ensure the groove being always exactly in the right place. This gauge when once set, will remain in the correct position no matter how the head is moved; but if the cutters are changed in shape, or not accurately replaced when taken out to be sharpened, the gauge can be instantly re-adjusted so that it properly indicates the edge of the cut. After the work has been clamped, and the cut has been taken, the operator can, without reclamping the work, feed the head forward, so that a further cut can be taken from the face. This feature is possessed by no other machine, and is of utmost importance, as it enables the operator to creep up close to a line, and decreases the hand work of finishing. The gauge is made in such a manner that, no matter how much the head is moved, whether forward or back, it still indicates correctly the cutter's path. The cutters are in such shape that they can be readily sharpened; they are not likely to chatter, and the part which finishes the face performs no other work, and will therefore last a long time without becoming dull or throwing a burr. The entire machine is made in the most accurate and careful manner of the best material. The head is of steel and runs in bronze boxes, adjustable for wear. Price includes wrench and countershaft, not shown in the cut. Will bevel plates 16 inches or shorter. Floor space, 31 x 34 inches; weight, about 400 lbs.; tight and loose pulleys, 5 inches in diameter; width of belt, 2 1/2 inches; revolutions of countershaft per minute, 500.

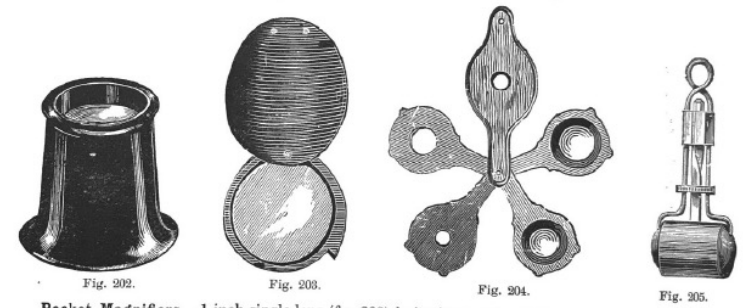
Price, £50.

Other sizes to order.

- Burr Clearer, 1/6.
- Lettering Gauges. 2 line, 8d. each; per set of 12, 6/6. 3 line, 9d. each; per set of 12, 7/6
- Grindstone. 9 in. with handle and trough, 7/6.
- Oilstones, Arkansas, in box, 4/6, 5/6, and 6/6.
- "    "    without box, 3/6, 4/6, and 5/6.
- "    Turkey, in box, 3/6, 4/6, and 5/6.
- "    "    without box, 2/6, 3/6, and 4/6.
- Engravers' Pads, 4 in., 1/3; 6 in., 2/6.
- Water Globes, 2/0, 2/6, and 3/0.
- Engravers' Bull's Eyes, mounted on stand, 13/6.
- Cabinets for Engraving Tools. 4 drawers, 7/6; 6 drawers, 8/6; 8 drawers, 10/6; 12 drawers, 12/6.

Magnifying Glasses.

- Engravers' Eye Glasses, (fig. 202) horn and ebonite, 1 inch lenses, 1/0 and 1/6.
- "    "    "    aluminium 1 " " 1/0.
- "    "    "    double, high power, 1/2 inch lenses, 2/0.
- "    Hand " 1 1/2 in., 1/6; 2 in., 2/0; 2 1/2 in., 3/0.
- Stand for Engraver's Glass, adjustable, with universal movement, 7/6 each.



- Pocket Magnifiers. 1 inch single lens (fig. 203) imitation tortoiseshell case, 6d.
- "    "    1 inch two lenses, horn or ebonite case, 2/0.
- "    "    1 inch three lenses, horn or ebonite case, 2/6.
- "    "    3/4 inch single lens, tortoiseshell, achromatic, 6/0.
- "    "    3/4 inch two lenses, ebonite, 1/6.
- "    "    3/4 inch three lenses, ebonite, 1/6.
- "    "    3/4 inch four lenses, ebonite, (fig. 204) 3/6.
- "    "    1 inch three lenses, ebonite, 2/0.

Coddington Achromatic Pocket Magnifiers, very powerful. Reading glass shape, about 1/2 inch, 3/8 inch, and 3/4 inch lenses, 4/6, 5/6, 7/6, 9/6. Nickel-plated mounts. Pocket folders (figs. 205 and 206), nickel-plated, about 1/2 inch, 3/8 inch, and 3/4 inch lenses, 4/6, 5/6, 7/6.



Fig. 206.

- "Linen Provers" (fig. 207) for counting number of lines or dots to the inch.
- 1/2 inch aperture, brass, 9d. each .. Nickel 1/3
- 3/4 inch " " 1/0 " " " 1/6
- 1 inch " " 2/0 " " " "
- 1 1/2 inch " nickel, achromatic, powerful 4/0
- 2 inch " " " " 5/0

Reading Glasses, 2 inches, 1/0; 2 1/2 inches, 2/6; 3 inches, 3/6.



Fig. 207.

Here is an example of a beveling machine for copper plates & different types of loupes & magnifiers



NOTES  
ON THE  
ROTARY PHOTOGRAVURE  
PROCESS

*by*

H. MILLS CARTWRIGHT

Being a new and enlarged  
edition of the book written by  
W. M. ROUSE, F.R.E.S.



THE AUTOTYPE COMPANY LTD.  
59 NEW OXFORD STREET  
LONDON, W.C.1  
Works: West Ealing

Writings by Cartwright published by the Auto type company who produced pigmentpaper for photogravure

The thick coating of pigmented gelatine absorbs a considerable weight of solution, and when fully saturated the backing paper may be so weakened as to render it incapable of bearing the full weight of the coating, unless the following precaution is taken. Before removing the tissue from the solution, fold over the top edge of the paper so as to give a double thickness for handling. The pressure of the fingers should be applied to the double paper two or three inches from the actual fold, and when placing down on the glass or metal plate the paper may be unfolded and thoroughly, but not too heavily, squeezed.

#### SUPPORT FOR TISSUE WHILE DRYING

The tissue may be dried on plate glass or on ferrotype plates. Chromium-faced plates may be used for small sizes.

Glass plates must be thoroughly cleaned and polished. They should be scrubbed under the tap with a brush to remove any traces of gelatine, and then cleaned with a mixture of:—

Methylated spirit	5 parts
Liq. ammonia	1 part
Water	5 parts

Finally, the glass is dusted over with French chalk and rubbed thoroughly with a soft cloth, moistened with spirit and water, so as to make the French chalk into a creamy paste. Rubbing is continued with a light circular motion until all signs of the chalk have disappeared, and the operations should be completed by wiping the surface of the glass with a clean cloth.

Ferrotype and chromium plates must be cleaned thoroughly, but the final polishing with French chalk may generally be omitted.

Some workers who constantly sensitize sheets of the same size seldom, if ever, clean the glasses, but rather rely on the removal of the dried sensitized paper to keep the glasses in perfect condition.

Some workers prefer to treat the glass with a solution of oxgall instead of French chalk. The following is a suitable formula:—

Prepared oxgall	10 gms.	1 oz.
Water	1000 c.c.	100 ozs.

The glass is thoroughly rubbed with a soft cloth moistened with the solution.

To prevent the tissue stripping prematurely during drying, a little glycerine should be brushed on the extreme edges of the paper before placing in the drying-cabinet.

#### DRYING THE TISSUE AFTER SENSITIZING

Blanket drying is simple and efficient. The drying material is printer's blanket containing a desiccating agent. The sensitized tissue, squeezed to a glass or metal support in the usual way, is covered with a sheet of news-print paper and then with the blanket, over which is placed another piece of glass. The drying time is about  $1\frac{1}{2}$  to  $1\frac{1}{2}$  hours. The blankets are dried after use for about  $1\frac{1}{2}$  hours in an oven of special design, and are then stored in a suitable container until they are required again. The advantages of this system (which is patented) are that the drying is uniform, and conditions are constant irrespective of the state of the atmosphere.

Any alternative system of air-drying must be planned to satisfy the following conditions as far as possible:—

1. The air stream must be uniform so as to ensure uniform drying.
2. The temperature, humidity, and velocity of the air must be constant, otherwise the speed and characteristics of the tissue will vary.
3. These factors must be adjusted so that the drying time is about  $2\frac{1}{2}$  hours. The paper should be in such a condition that it can be easily stripped from the glass. If it has already stripped, and is tending to roll-up tightly, it is an indication that it is over-dried. Its printing speed will then be lower than the normal, while it will be difficult to handle and will

not make good contact with the positives in the vacuum frame. This is one of the causes of mottled prints. On the other hand, the tissue tends to become insoluble if it is dried too slowly.

The simplest plan is to dry the tissue in a small room containing a large ventilating fan of the oscillating type. The metal (or glass) plates bearing the tissue are supported on a rack at an angle of  $45^\circ$ , and the fan is placed on the floor so as to blow air over them. A small electric radiator is used to keep the temperature constant at about  $70^\circ$  Fahr. ( $21^\circ$  C.). Naturally the temperature is out of control on very hot days, and the drying must then be done at night. This simple system gives fairly consistent results in spite of the fact that humidity is not controlled.

Drying cabinets that draw in air from outside are seldom satisfactory because of the difficulty of conditioning the air. Cabinets in which the same stale, damp air is continuously circulated are very unsatisfactory, but if the design of the apparatus takes the form of a wind-trunk forming a closed circuit, the humidity can be regulated by means of trays of calcium chloride, and small heating elements can be used to raise the temperature.

The difficulty of drying in hot weather can be overcome by the introduction of refrigerating coils to reduce the temperature.

In a more elaborate form of drying plant, the humidity is controlled by refrigeration. The apparatus generally consists of an air-conditioning compartment and a separate drying cabinet. The air is cooled by refrigeration in the conditioning compartment, moisture being deposited on the pipes of the refrigerator. The partially dried air is warmed to the required temperature and is drawn through the drying cabinet by means of ventilating fans. This type of apparatus requires careful supervision, and the cost of installation and running is relatively high. These factors tend to restrict its use, but it has special value in tropical climates.

The actual design of any drying system naturally depends on local climatic conditions, and on the size and quantity of

tissue to be dried. It is advisable to obtain the advice of a qualified air-conditioning engineer when apparatus is being specially designed.

#### STORAGE AND CONDITIONING OF SENSITIZED TISSUE

The characteristics of sensitive pigment paper, including its speed, gradation and contrast, depend not only on the sensitizing and drying conditions, but also on the amount of moisture present in the gelatine, and on the age of the sensitized tissue. Assuming that the sensitizing and drying conditions are constant, or nearly so, the speed of freshly sensitized tissue does not vary much, but if it is kept for any length of time before exposure, its sensitivity increases with age, and varies according to the amount of moisture it contains. If it is stored in a very dry place, it is slow and gives a contrasty print; whereas tissue stored in a damp place is faster and gives a softer print.

The following are details of one of our experiments bearing on this point:—A sheet of Autotype photogravure tissue was sensitized and dried on glass. On stripping from the glass, the sheet was cut into three pieces: one piece being placed in a calcium box, the second piece stored in a normal manner, and the third piece placed in a damp position.

Two days later the three pieces of tissue were tested for moisture content and printing speed.

No. 1. The piece that had been stored with calcium contained 8 per cent. of moisture. Its printing speed was slow, and varied very little from its speed immediately after drying.

No. 2. The piece stored normally contained 10.6 per cent. of moisture and was 13 per cent. faster than No. 1.

No. 3. The piece that had been stored in a damp position contained 16.5 per cent. of moisture, and the printing speed was 70 per cent. faster than No. 1.

The above experiment was of a very drastic nature. Sensitized tissue should *never* be stored in a calcium box, neither should it be placed in a position so damp as to enable it to

Example of text on drying the pigment paper for photogravure

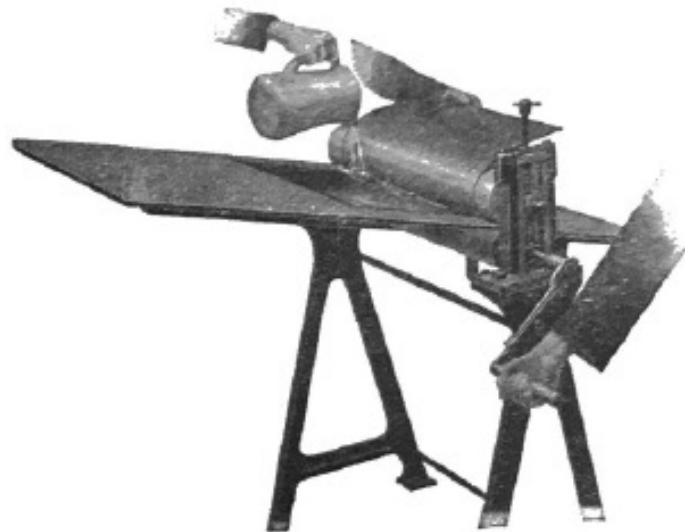


ILLUSTRATION B

A special squeegee is made and supplied by Photogravure Supplies Ltd., for this purpose, photograph of which we are enclosing. The carbon tissue is first of all positioned on the plate and just tipped at one edge as the diagram enclosed, with adhesive tape.

Then the plate and the carbon tissue is gripped in the squeegee as Illustration B, and the carbon tissue is held up by one person as illustrated and tepid water (80 degrees) is poured so as to run down the plate to the point where the carbon tissue and the plate come in contact. Immediately the contact point is flooded with water, the handle of the squeegee is turned round so as to bring the whole carbon tissue into contact quickly. The object of this being that as the carbon tissue is paper and gelatine, by moistening or damping it, it will be subject to stretch, but by this means we are able to get the carbon tissue in contact with the copper before it has had any time to stretch at all.

Immediately this comes out at the back of the squeegee, the excess moisture is wiped off.

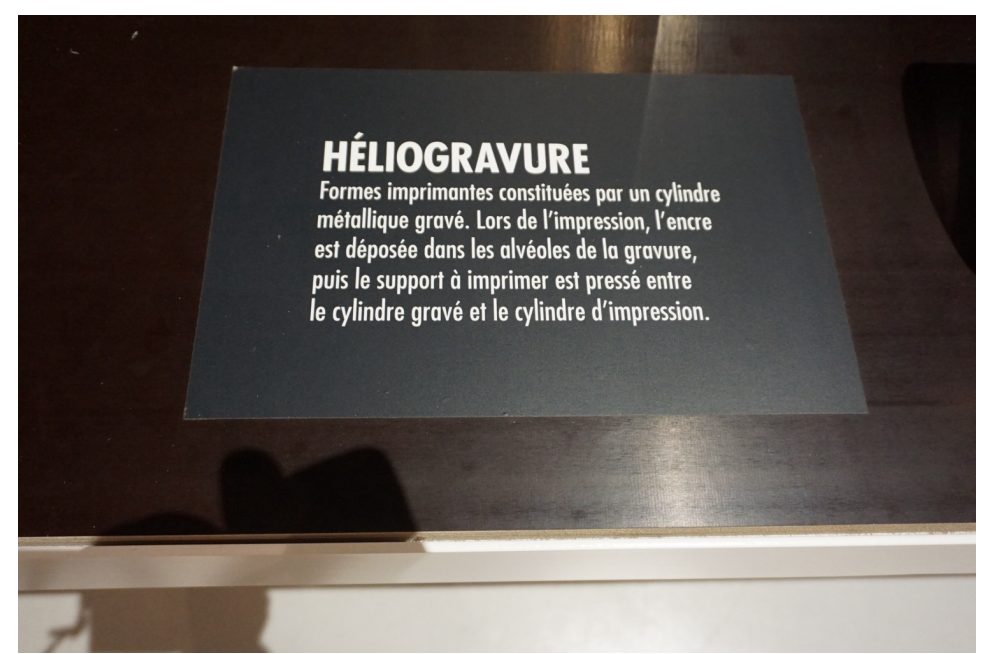
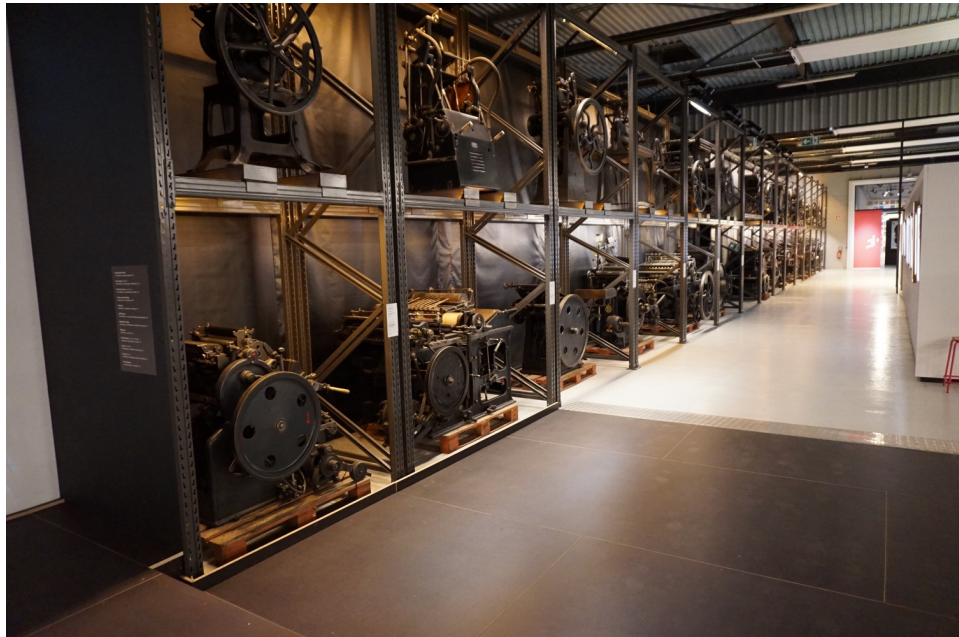
We have now got the carbon tissue squeegeed on the plate in position and the next operation is to remove the paper and leave the film in contact ready for etching.

A special squeegee for laydown of paper on the copperplate

## Atelier-Musée Imprimerie (AMI) The Print Museum at Malesherbes 2021



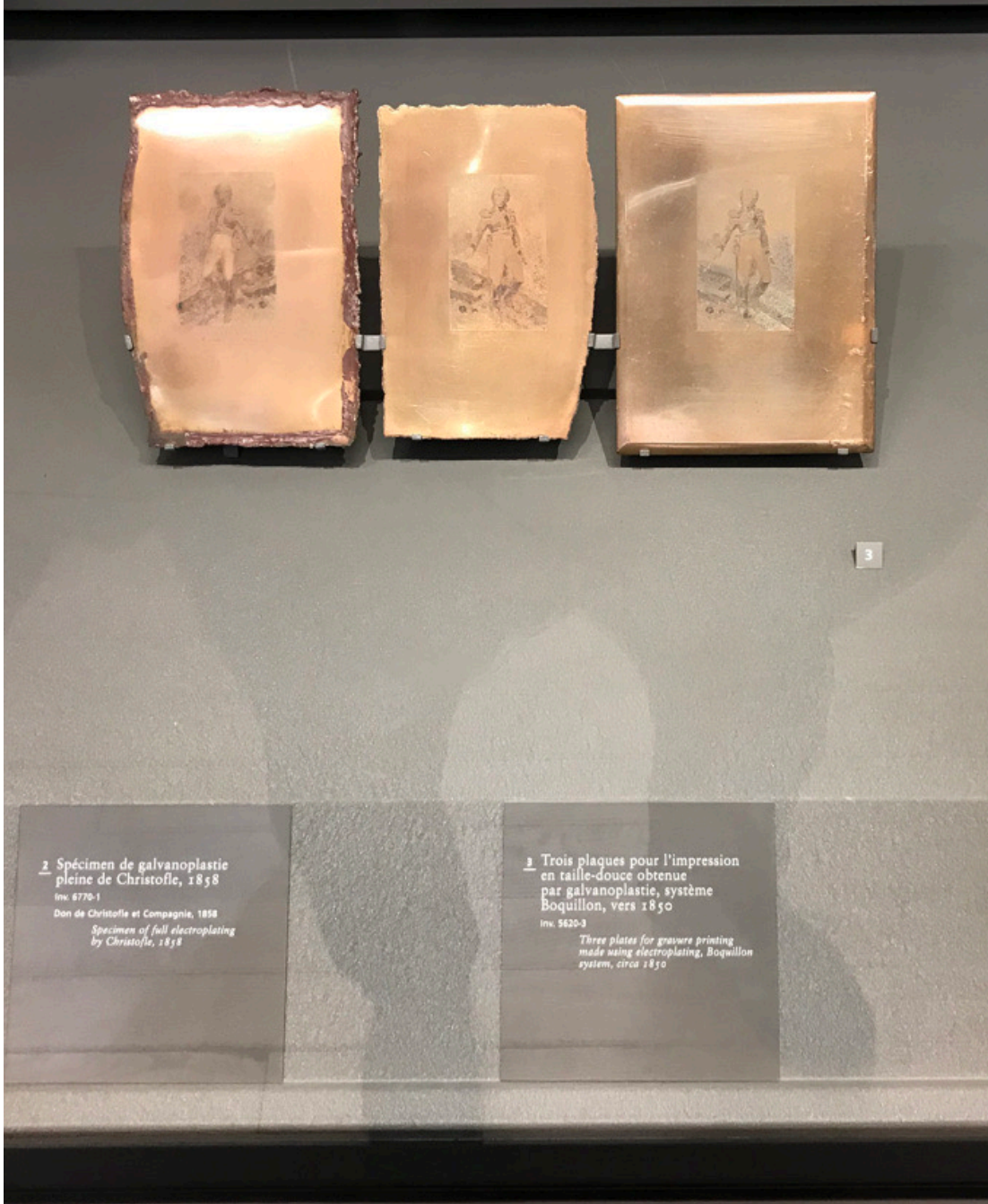
To go out here is a day trip. It takes 1 ½ hrs out to Malesherbes with the RER train from Gare Austerlitz in Paris. From the train station it is a 15 min walk to get to the Museum which is situated outside the town. The museum takes you through the history of printing all the way from Gutenberg up to the digital revolution. It is a must see for anyone who is interested in the history of the print & machines.



Here you will find everything from a replica of Gutenbergs press to beautiful machines for typography, rotogravure cylinders & much much more

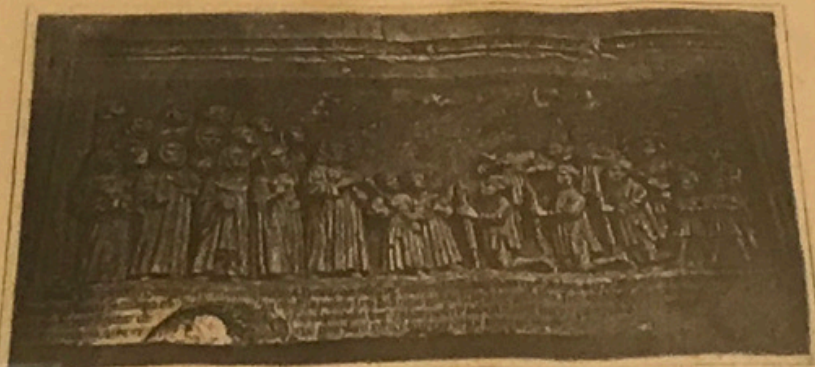


Paris Musee Arts et Metiers 2021  
Was not in the plan but during a rainy day  
in Paris I visited there for a couple of hrs &  
discovered that they actually had the  
cradle of the French development of  
photomechanical process there. Here are  
some examples of different French  
photogravure processes



Trois Plaques pour l'impression en taille-douce  
Obtenue par galvanoplastique système Boquillon, vers  
1850

Three plates for gravure printing using electroplating,  
Bouquillon system, circa 1850



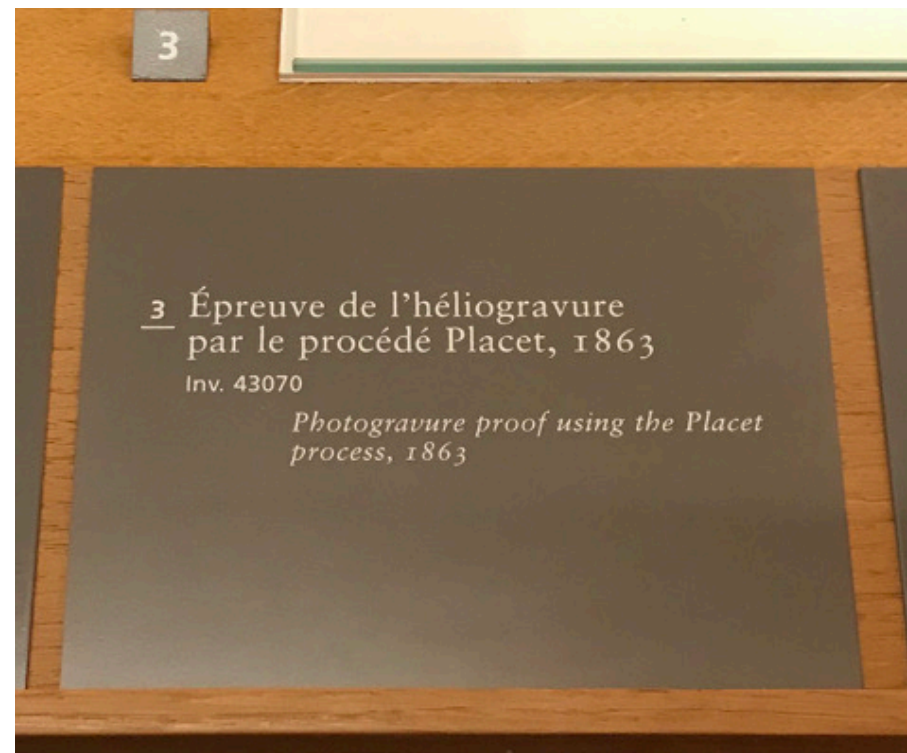
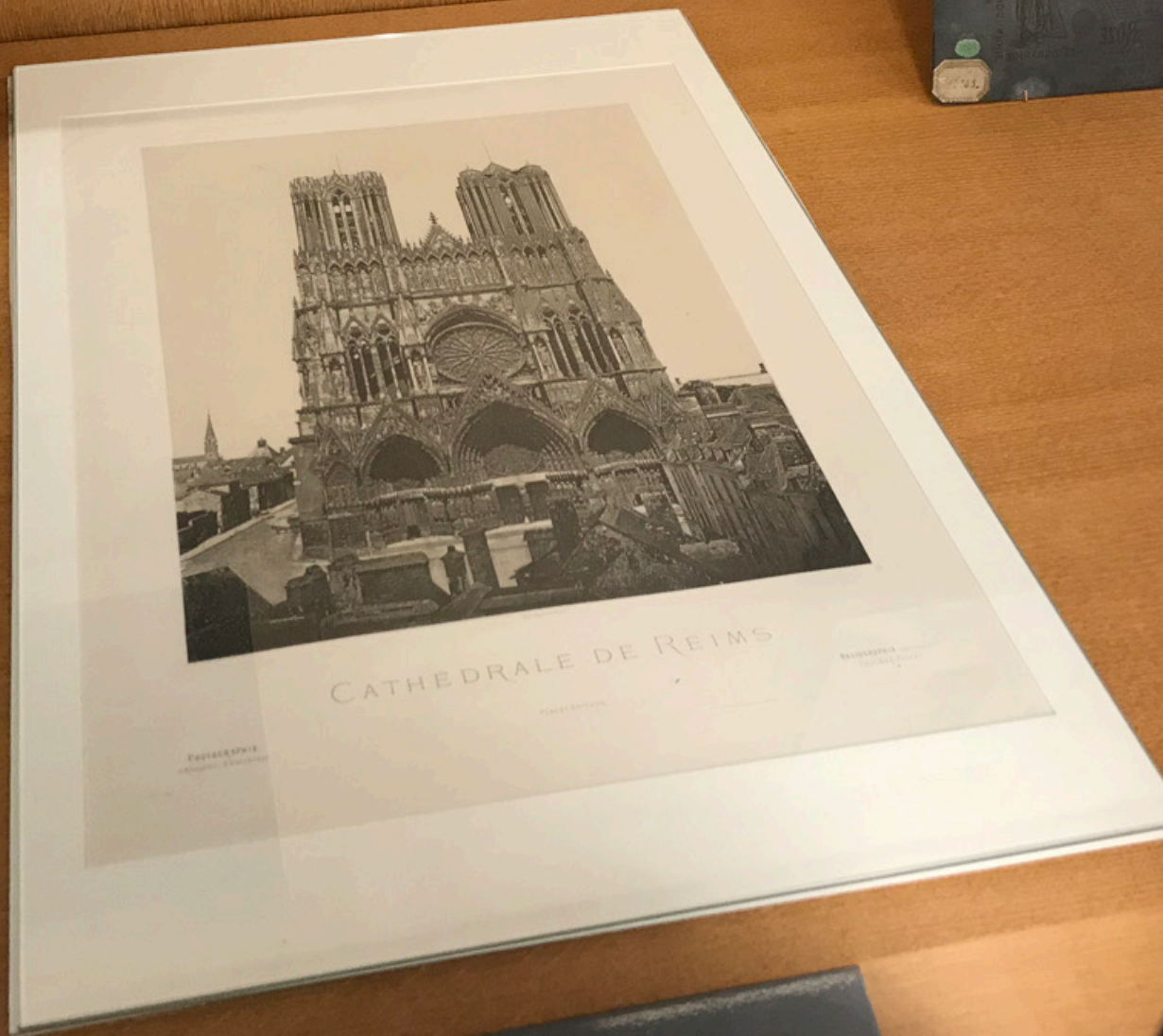
8 Épreuve d'héliogravure par le  
procédé Fizeau « Bas relief »,  
vers 1850

Inv. 16518-2

*Photogravure proof using the Fizeau  
process, "Bas relief", circa 1850*

The Fizeau process circa 1850



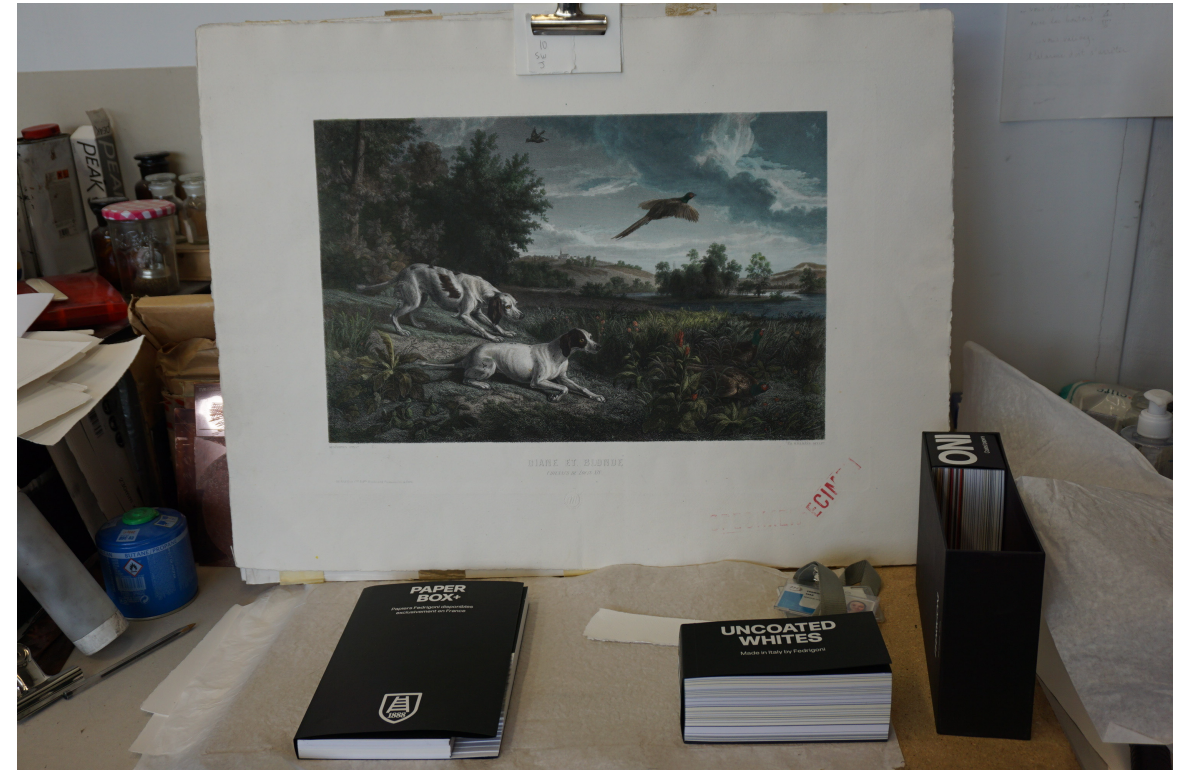


The Placet process 1863

## Paris, the Chalcographie du Louvre 2021

Since 1797, the Chalcographie du Louvre (The Intaglio print shop) has conserved and printed from a collection of around 15000 thousand engraved copperplates, among other things the 900 plates of the Description of Egypt, The collection of plates continues to grow to this day, thanks to purchases and commissions from contemporary artists for the printing of contemporary original etchings.

To produce a result identical to the engraver's intentions, the workshop conducts in-depth research into intaglio inks. Special attention is paid to the color result, and different types of black are often mixed together according to their tone- cool or warm- to produce subtle prints.





My visit here was focused on a discussion around the photogravure /heliogravure media how it is named and perceived in different foras of discussion as in books, on the internet & in the realm of printmaking. As well as an in depth conversation on papers, inks, felts, oils, varnishes & wiping materials and printing of plates.

I will finish with a video from the Louvre Intaglio workshop which is a short sum up of the discussion that went on at my visit there.

## Visiting the Louvre intaglio workshop

<https://vimeo.com/784575003>

Special thanks to:

The Print & Curator team at Chalcographie du Louvre for their hospitality & generosity in sharing their knowledge & expertise

Bjørg Taranger for video filming & editing

Cathrine Liberg for the use of recorded photogravure club sessions

Enrique Guadarrama Solis for assisting

&

all the students, teachers & technicians at KHiO who have participated in the photogravure club over the past 10 years.

Thank you

