

THE ART OF PHOTOGENIC DRAWING



*WILLIAM HENRY FOX TALBOT'S ORIGINAL PROCESS
OF PHOTOGENIC DRAWING, DESCRIBED, EXPLAINED
AND ADAPTED FOR USE BY ARTISTS, SCHOLARS,
STUDENTS OF THE HISTORY OF TECHNOLOGY AND
ALL INDIVIDUALS INTERESTED IN DISCOVERING,
THE SECRETS OF THE BLACK ART*

Introduction

The Art and practice of Photogenic Drawing described here is based upon detailed experiments taken from the working notebooks, manuscripts and early publications of William Henry Fox Talbot.

Nature Printing: a process by which a direct impression was made from a dried and flattened plant specimen by rolling or dabbing it with black ink and taking an impression upon paper.

Cliché verre experiments in Geneva: Take a sheet of glass and smear it over with a solution of resin in turpentine. When half dry hold it over the smoke of a candle: the smoke will be absorbed by the resin, & altho' the glass will be darkened as usual there will be a sort of glaze over the smoke which will prevent it from rubbing off. Of course if any opaque varnish should be at hand it will be simpler to use that.

On this blackened surface, when not quite dry, let any design whatever be made with a needle's point, the lines of which will be transparent. When this is placed over a sheet of prepared paper, a very perfect copy is obtained every line which the needle has traced being represented by a dark line upon the paper.

By following the instructions carefully, readers can gain an insight into the nature and practice of this, the first photographic process on paper and be able to recreate sun pictures in exactly the same way Talbot did at Lacock Abbey in August 1835, when he made the earliest known surviving photographic negative.

His first essay in the art almost certainly made as a result of his need to record the complex variations of plant specimens that formed a component part of his interest and research as a botanist. He was already a member of the Linnean Society and would have undoubtedly been aware of the ancient art of *nature printing*.

Talbot's proto-photographic experiments, (remember that the vocabulary to describe this new activity had not yet come into being) actually began in Geneva in 1834 and shortly afterward can be found in his first description of the photographic negative and positive. At the beginning of the following year, in notebook N, on February 28, 1835, he made the following historic entry:

In the Photogenic or Sciagraphic process [Greek: skia - shadow], if the paper is transparent, the first drawing may serve as an object, to produce a second drawing, in which the lights and shadows would be reversed.

A concise and simple description of a photographic negative and its prime function, the replication and generation of images taken with the aid of a camera obscura, by the agency of light alone.

Michael Gray *Curator, The National Trust, Fox Talbot Museum*

The Alphabet of the Art

William Henry Fox Talbot announced the method he used to make his *Sun Pictures* or *Photogenic Drawings*, in a paper read before the Royal Society on 31st January 1839.

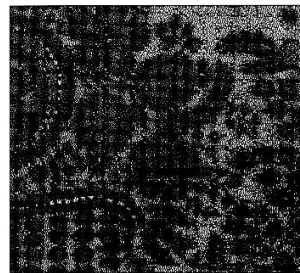
It was headed: *Some Account of the Art of Photogenic Drawing*, and he wrote: *I proposed to spread on a sheet of paper a sufficient quantity of the nitrate of silver, and then to set the paper in the sunshine, having first placed before it some subject casting a well-defined shadow. The light, acting on the rest of the paper, would naturally blacken it, while the parts in shadow would retain their whiteness. Thus I expected that a kind of image or picture would be produced, resembling to a certain degree the object from which it was derived.*

This idea was not entirely new. An earlier attempt to make pictures by the chemical action of light on certain substances but these had been failures because the experimenters, notably *Thomas Wedgwood* and *Humphrey Davy*, had, in 1802, been unable to make their images resistant to further action by light. Talbot faced the same problem:

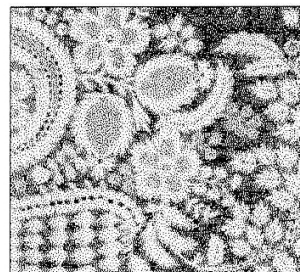
I expected, however, also, that it would be necessary to preserve such images in a portfolio, and to view them only by candlelight; because if by daylight, the same natural process which formed the images would destroy them, by blackening the rest of the paper.

To overcome the problem, Talbot turned his attention to finding a preserving process which would completely render the exposed paper insensible to any further exposure to light. After numerous experiments he eventually found a chemical substance which had the desired effect, but when he announced his discovery of photogenic drawing, he withheld all details of what that substance was or how it was to be used.

In *Some Account of the Art of Photogenic Drawing*, published in 1839, Talbot did not specify either the process by which the paper was sensitised, or the chemical treatment which preserved the image. He did, however, describe at some length some of the applications which photogenic drawing might have - making silhouette portraits; copying paintings on glass, images formed by the solar microscope,



A contact print taken from a piece of black lace shown together with its related positive print





statues and bas-reliefs, and engravings; and making views of architecture, landscape and external nature by exposing the paper in a camera obscura.

The image obtained in the first instance by Talbot's process was a negative [in that the lights and shadows were reversed]. Talbot gives for the first time his account of the way in which positive copies - an infinite number, could be obtained.



The terms negative and positive were first used in connection with photography by Sir John Herschel in 1840, for the first time.

If the [negative] picture is first preserved so as to bear sunshine it may be afterwards itself employed as an object to be copied; and by means of this second process the lights and shadows are brought back their original disposition.

*Cast shadow of a stone figure
Lacock Abbey roofline, circa 1835-9
Photogenic drawing negative and
positive*

The potential for the production of an unlimited number of positive copies inherent in Talbot's process meant that the subsequent development of photography was to largely derive from it rather than from its rival - that invented by Daguerre - where only one direct positive image could be obtained.

Naturally enough, Talbot's scientific friends who had heard his paper on photogenic drawing were, to say the least, curious to know the method by which the paper was sensitised and how, once an image had been obtained, it was fixed. In response to requests for such details Talbot gave *An Account of the Process Employed in Photogenic Drawing* in a letter to the Secretary of the Royal Society which was read before the Society on 21st February 1839; Talbot specified that paper of *a good firm quality and smooth surface* should be used.

The Photogenic Drawing Process

First, it was immersed in a weak solution of common salt and wiped dry, then it was coated on one surface only with a solution of silver nitrate. This solution was made by diluting a *saturated solution* of silver nitrate 6 or 8 times with distilled water. When dry the prepared paper was ready for use. The sensitivity of the paper, Talbot noted, could be increased by repeating the process one or more times.

The biggest problem facing earlier workers had been the preserving of the image. Talbot stated that his first successful experiments were with potassium iodide *much diluted with water*. He argued that by washing a photogenic picture over with the solution, *an iodide of silver is formed which is absolutely unalterable by sunshine*.

Talbot's first photogenic drawings were preserved using potassium iodide and they exhibit a characteristic pale yellow tint in the highlights. However he said that his usual method of preserving the image, discovered shortly afterwards, was to immerse the picture in *a strong solution of common salt*. Pictures treated in this way, dried and then exposed to direct sunlight quickly undergo a colour change: the white parts *colour themselves of a pale lilac tint, after which they became insensible*. Talbot's experiments showed that *the depth of this lilac tint varies according to the quantity of salt used relative to the quantity of silver*.

It is quite easy to repeat the process of making photogenic drawing in exactly the same way as described. The results display a variety of colour which is very difficult to produce by modern photographic techniques, and they have a charm all of their own. Talbot noted that slight variations in the proportions of the chemicals used in technique led to just such a variety of tints and hues in the finished pictures, and this, coupled with slight imperfections inevitable in the silver nitrate coating, ensures that each picture is unique. If you would like to make your own photogenic drawings then the following procedure, based on Talbot's specifications, may be used guide towards achieving satisfactory results and as a basis for experimentation.

Talbot's Original Formula and Method

To make a Photogenic Drawing, you will need for sensitising the following chemicals and equipment.

- a Good quality writing or drawing paper.
- b Sodium Chloride [common salt]
- c Silver Nitrate crystals
- d Distilled or de-ionised water
- e White blotting paper
- f A soft brush or cotton wool
- g 3 photographic developing dishes
A printing, [pressure frame]; sheet of glass; a piece of plywood covered with thin foam or velvet, hinged at the centre and held together with bulldog clips

Making up the solutions

Solution A

Take a stock solution of salt by dissolving as much as possible in 300ml of hot water. Allow the solution to cool and the excess salt will crystallise out to give a saturated solution. For use in preparing the paper, dilute 1 part stock solution with 18 parts water

Solution B

Dissolve 5gm of Silver Nitrate in 40ml of distilled or de-ionised water.

Preparing the paper

- 1 Wash the paper in clean water to remove as much as possible of the impurities left in it from the manufacturing process which might affect the result.
- 2 Immerse the paper in the salt solution and soak for a minute or two; remove any excess liquid from the surface of the salter paper; blot and allow to dry.
- 3 Pin the sheet of paper to a piece of softboard with stainless steel, glass headed pins. the board should have previously been covered with a sheet of blotting paper which is discarded each time it has been used.

4 In subdued artificial light brush one side only of the salted paper with the silver nitrate solution. Use a soft brush or a wad of cotton wool and apply the solution evenly over the surface. Care should be taken not to get silver nitrate on the skin as it leaves a brown stain which is difficult to remove. Allow the paper to dry and it is ready to be exposed. To avoid confusion, put a pencil mark on the sensitised side of the paper so that it can be correctly identified when it has dried.

The silver nitrate combines with the salt to form a coating of silver chloride which is very sensitive to light. On a sunny day the paper will turn almost black in less than 5 minutes or so. Until required for use it should be kept in a light-proof container such as a black plastic bag used to protect photographic materials.

Exposing the image

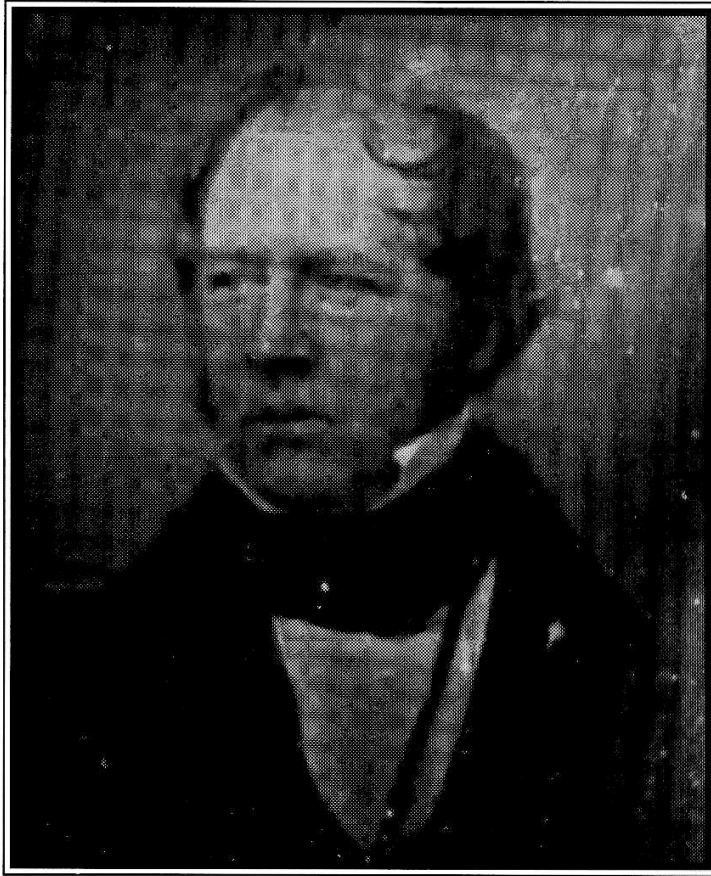
To make a photogenic drawing of an object such as a leaf, place it in contact with the sensitised side of the paper either in a printing frame or under a sheet of glass, and expose the paper to the sun for 15-30 minutes. When sufficiently exposed, the paper should be quickly removed and put in a light-safe place.

Fixing the image

To prevent the paper from being further affected by the light and thus ruining the image, it must be fixed [stabilised] by further chemical treatment. First wash the paper in running water for 5 minutes or until no further silver solution can be seen to leave the sheet; immerse it in a strong solution of salt# for a few minutes [use the stock salt solution diluted 50%].

Again wash the paper in water. The image can now be viewed by daylight without being obliterated, though you will find that the highlights turn a violet colour after a further few hours exposure.

You have now made a photogenic drawing in exactly the same way as those first made by Talbot over 150 years ago.



Henry Fox Talbot, aged approximately 43,
a daguerreotype portrait taken by Beard 1842 /3