THE DAGUERREOTYPE PORTRAIT OF DOROTHY DRAPER

Image from Artotype print made in 1893 of the 1840 original Daguerreotype.

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By R. Derek Wood (Member) and Mrs. E. D. Shorland

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In our September issue we published an account by James L. Enyeart, Curator of the University of Kansas Museum of Art, describing his successful restoration of the daguerreotype portrait of Dorothy Draper. This is the earliest known daguerreotype portrait, and was in the possession of the Herschel family from 1840 to 1939.

We have received the following observations on Mr. Enyeart's article from R. D. Wood (Member) and Mrs. E. D. Shorland. Mrs. Shorland is the great-granddaughter of Sir John Herschel and possesses a number of family letters and relics.

WE WERE very interested to read Mr. James Enyeart's article in the September issue of *The Photographic Journal* on the fate of the famous daguerreotype portrait of Dorothy Draper. It is most exciting that Mr. Enyeart's treatment of the daguerreotype with a solution of thiourea has restored the image that was obliterated when Mr. Gear attempted to clean it in 1934. A number of questions are raised about the chemical treatments which have been carried out on this beautiful portrait during its existence of 130 years.

One of us (Mrs. E. D. Shorland) possesses the correspondence of Sir William and the Rev. Sir John C. W. Herschel which includes letters concerning the Draper daguerreotype.[1] Some of these letters, which were written when the portrait was sent to the Chicago World Fair in 1893 and during the l930s when the image became obliterated can, it is hoped, be copied and sent to the University of Kansas Museum of Art, and there filed along with the portrait. However, readers of the *Journal* may be interested in some of the information which has come to light.

The man who attempted, with such calamitous results, to clean the daguerreotype in 1934 was Mr. John H. Gear. At that time he was the Principal of a 'School of Pictorial and Technical Photography' which was close to Madame Tussaud's in the Marylebone Road, London. He must have been well known in The Royal Photographic Society, for he was its President from 1916 to 1918; he died in 1946, aged 82. He seems to have had a long, and indeed successful, experience in cleaning daguerreotypes, and two letters which he wrote to the Rev. Sir John Herschel in 1934 show how distressed he was about the disappearance of the image from the portrait. On 30 April 1934 he wrote:

> I am worried very much over your daguerreotype. It has not gone right in cleaning off the oxidation. In all the twenty-five years, and more, that I have been cleaning them I have never had one behave in a similar manner. I am always taking every precaution, but in this instance I went through what I would term unnecessary precautions.
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> The chemicals which I keep specially for the process were somewhat old, but working quite well. However, I got in new chemicals, but before applying them to your daguerreotype, I kept it

> back until I had another daguerreotype in to restore. One that came in and was in a very bad condition I used the new chemicals for, and it cleaned and restored perfectly. I was working 25% under the strength to which one can safely go with that one. I then made up the bath afresh and reduced it another 25% in strength for yours, and in addition used distilled water throughout — it is only usual to apply distilled water for the final wash. The oxidation responded quite normally and cleared, but for some reason that I am unable to suggest, a kind of milky bloom appeared directly I removed it from the solution: not upon the portions of the image, but upon the bare silver portions which reflect the light to give the lighter parts. It completely mortifyed me as I have never had one act previously like it. Nothing more can be done, and greater caution could not possibly be exercised. It made me tremble as I felt so very upset, and my regret is unexpressable …

Five weeks after giving this sad news Mr. Gear sent the daguerreotype back to the Rev. Sir John Herschel:

> June 8, 1934
> Dear Sir John,
> I have sent you your daguerreotype by separate registered cover ...
> The matter has worried me very considerably. Not that anything else could have been done for safely outside what I did; however, it has been distressing, for over a period of 30 years I have been handling daguerreotypes, but never had the slightest failing. Yet this one, with which I took extraordinary precautions, failed — treating it with a care as if it belonged to myself. You can imagine my feelings perhaps.
> Before I sent it to you I wanted to get an old friend, with whom we collaborate upon out-of-the-Way matters, and talk it over. I only saw him yesterday. He was equally puzzled with me, and could see no reason for it unless it had been coated with some protection medium which we have never before experienced.
> I also wanted to try at a corner which is covered, if it were possible to attack the "bloom" chemically, but unfortunately it would not respond. I had therefore rebound it and preserved all the writing on the undercovers by putting on another mask, keeping the sealing of it off the writing everywhere.
> The image had not been affected. The "bloom" is upon the plain silver portion, which has the effect of bringing up the parts which reflected dark nearly equal to the lighter portions which gave the highlights. Thus the positive image almost appears to be now a negative one. It is bewildering and has many times made me feel quite dizzy.
> I regret that I cannot see my way to do more than again express my deepest regrets for a condition which could not have been prevented, and as greater care could not have been exercised.
> Yours faithfully,
> John H. Gear

Mr. Gear says that the plain portions of the picture were altered — "The image had not been affected". Mr. Enyeart describes "a blank plate covered with black silver oxides". Surely then, Mr. Enyeart has not in fact "revived" an image but, more simply, *cleaned* the daguerreotype?

It is, of course, most frustrating not to know what chemicals Mr. Gear was using. His remark about the possibility of there being a protective coating on the daguerreotype is

interesting; for in 1841 Draper described a number of experiments with daguerreotypes in which he coated them with gum arabic or isinglass (fish glue or fish gelatin).[2] Perhaps, however, Gear's remark was due to his knowledge of Draper's work, rather than due to any independent observation of the daguerreotype surface. It would be most surprising if the Dorothy Draper portrait was coated; for the coating experiments were surely of a later date.

Mr. Gear's method of cleaning daguerreotypes had always, he said, been successful. Why then should the effect on the Draper portrait have been so disastrous? Could this daguerreotype be unusual in any way?

The most immediately obvious way in which the Draper portrait would be different from the vast majority of existing daguerreotypes is that it would not be gilded. The technique of toning daguerreotypes with gold chloride was introduced, and universally adopted, late in 1840. Only the very earliest daguerreotypes would lack gilding; they would be much more liable to tarnish, and more difficult to clean satisfactorily.

Draper's "darkroom" technique was Daguerre's original method. His later casual remarks of 1864, which are quoted by Mr. Enyeart, about having possibly used bromine sensitization, should not be allowed to gain any credence. All of Draper's writings of the early 1840s specifically mention only the use of iodine sensitization. He described his technique for taking daguerreotype portraits in the *Philosophical Magazine* of September 1840, and he explains quite clearly on page 219 how he coated the plates with iodine. His chemical treatment of the plates only occasionally departed in one respect from Daguerre's original method; for although he had found that fixation with hypo gave excellent results he also devised a method of his own. This method consisted in placing a piece of zinc in contact with the daguerreotype under a solution of common salt.[3] It is unlikely that this would have had any radical effect upon the plate. There is no information available about the method of fixation that was used upon the portrait anyway; but the possibility that zinc was used should at least be borne in mind.

J. W. Draper's letter of 28 July 1840 which accompanied the gift of the daguerreotype to Sir John Herschel was quoted by Mr. Enyeart directly from Prof. Taft's book *Photography and the American Scene;* but in fact the first paragraph of the original manuscript of the letter is different in a very small, but significant, way.

The original letter begins: "Though I have not the honour of your personal acquaintance I do not hesitate to send to you a heliographic portrait taken from the life by the daguerreotype — the process I have described in a communication to the *London & Edin. Philosophical Magazine,* which is probably published by this time. We have heard in America that *owing to the inferior brilliancy of the sun's rays* all attempts of this kind had been unsuccessful both in London & Paris ... [etc.]".[4]

As can be seen, the words which were omitted from the published version, and which we have placed in italics, show that Draper did not attribute his success to any new process such as bromine sensitization.

Draper's early success in portraiture is surely due to his careful "studio" technique; to his careful posing and lighting, and especially to his use of a blue screen. Professor Taft was inclined to think that Draper borrowed his method of taking portraits from Alexander Wolcott; but it is very difficult — in fact we find it impossible — to believe that Wolcott rather than Draper would have first thought of using blue light illumination.[5] Draper's use of a blue liquid filter (ammoniated copper sulphate) reduced the intensity of the light shining into the eyes of the person posing, whilst at the same time the actinic effect of the blue light upon the silver iodide plate was as great as that of white light. The comfort of the person posing during the long exposures would certainly have been of some importance, but the use of a blue filter is of particular significance because it made focusing more accurate; for the eye was then observing the same rays as was the blue–light sensitive plate. Achromatic lenses were not available, and indeed, if the blue filter was used while focusing then such lenses were not entirely necessary.

Draper's scientific knowledge gained during his experimentation on light during the previous four years meant that he was extremely well prepared to take advantage of all the minute details of technique which lead to successful photography. Draper had been aware of the use of ammoniated copper sulphate as a blue filter since early 1837. Few people are aware of the almost–photographic nature of Draper's work in the years before the invention of photography was announced in 1839. In his 'experiments on solar light' which were published in the *Journal of the Franklin Institute* in April and June 1837 he used silver chloride treated paper as a means of measuring light intensity; whilst carrying out experiments with various filters he states that he "produced a cone of light converging from the lens, where light passes through a solution of sulphate of copper and ammonia contained in the trough; if now we hold in the focus a piece of bibulous paper, imbued with chloride of silver, although little or no heat is transmitted through the solution yet an extremely dark spot is produced characteristic of the blackening of that substance by solar rays".[6] Now these are experiments in photometry. Draper did not know, in 1837, how to "fix" his dark spots on the silver-treated paper; in fact, the idea did not occur to him. He did not make the imaginative step forward to invent photography; but he was very capable of quickly and efficiently taking the beautiful portrait of his sister which is illustrated on page 339 of the September issue of the *Journal.* What a marvel this image must have seemed 130 years ago.

[Solar Spectrum Daguerreotype]

There is still a Draper daguerreotype remaining in England. It is not a portrait, but is of a scientific subject – the solar spectrum – and is now in the Science Museum, London. Dr. D. B. Thomas, who is in charge of the photographic collection at the Science Museum, tells us that it remains in reasonable condition.

This second daguerreotype was also sent to Sir John Herschel. Draper wrote to him on 26 September 1842, two years after sending the portrait of his sister:

> ..... I am induced to send you, because it will certainly interest you, a daguerreotype impression of the spectrum which I recently made in Lat. 37° 10' N on the yellow iodide of silver

(Daguerre's preparation). I have tried in vain to procure one like it in New York, though there is no difficulty in getting them in Virginia ... [etc.].[7]

Again we can note that Draper mentions only the use of Daguerre's original method, and again he draws attention to the necessity of ample light being available.

This daguerreotype was sent, as was the earlier portrait, through the offices of the *Philosophical Magazine,* and articles were published both by Draper and Herschel about the spectrum daguerreotype in that journal.[8, 9]

References

1. Letters concerning the Draper Daguerreotype in the possession of Mrs. E. D. Shorland**:**
   (*a*) Correspondence during 1893–4 between Sir William J. Herschel and Chancellor MacCracken of New York City University, and with Mr. Lincoln of U. S. London Legation.
   (*b*) Letter dated 7 April 1933 from Rev. Sir John C. W. Herschel (1869–1950) to Prof. R. Taft, and Taft's letter dated 22 March 1933.
   (*c*) Two letters, from John H. Gear to Rev. Sir John Herschel, dated 30 April 1934, and 8 June 1934.
   (*d*) Copy of 1893 Artotype Print of the Dorothy Draper daguerreotype, and copy of Gear photograph (1934) of Draper daguerreotype.
2. Draper, J. W., *Philosophical Magazine*, September 1841, **19** (3rd Series), pp. 199-201.
3. Draper, J. W., *Phil. Mag.*, September 1840, **17**, p. 221
4. Letter from J. W. Draper to Sir John Herschel, dated 28 July 1840; letter HS 6.501, Herschel Correspondence, Royal Society, London. We would like to thank the Royal Society for allowing this extract to be quoted.
5. It was possible, anyway, for both Draper and Wolcott to have learnt the use of a blue filter in portraiture from the suggestion of Daguerre himself. *(Comptes Rendus Acad. Sci. Paris,* 1839, **9**, p. 266). But as can be seen from ref. 6, Draper certainly did not need to obtain the idea for the use of the blue filter from Wolcott.
6. Draper, J. W. *J. Franklin Inst.*, June 1837, **19** (n.s), p.475; see also p. 296–7 and p. 472–3. These experiments were certainly influenced by the earlier work of Mary Somerville, and in regard to the use of ammoniated copper sulphate filter probably by Prof. Charles Daubeny. Sir John Herschel described the blue liquid filter in 1823 *(Trans. Royal Society, Edinb.,* 1823, **9**, p.453).
7. Letter dated 26 September 1842, from J. W. Draper to Sir John Herschel, HS 6.502, Herschel Correspondence, Royal Society, London. Herschel replied to Draper on 5 December 1842, Royal Society HS 25, Copybook 6, Letter 16.
8. The spectrum daguerreotype was forwarded to Herschel by Richard Taylor, who was the publisher and "conductor" of the *Philosophical Magazine,* on 29 October 1842. Royal Society, Herschel Correspondence, HS 17.337–341 (five letters dated between 29 October 1842 and 2 February 1843, R. Taylor to Sir John Herschel).
   Mr. Enyeart mentions that the Dorothy Draper portrait was sent on to Sir John Herschel in 1840 via Mr. Brayley; this, in fact, was E. W. Brayley (1802-1870) *(Dict. Nat. Biography,* 1886, **6**, p. 246) who was at that time London editor of the *Philosophical Magazine.*
9. Herschel, Sir John, *Phil Mag*., February 1843, **22**, pp. 120-132 and Plate 2**;** J. W. Draper, *Phil. Mag.,* November 1842, **21**, pp. 348–350.