

THE INVOLVEMENT OF SIR JOHN HERSCHEL IN THE
PHOTOGRAPHIC PATENT CASE, *TALBOT v. HENDERSON*, 1854

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THIS paper reports Sir John Herschel's use of gallic acid in his photographic experiments prior to W. H. F. Talbot's discovery, in September 1840, of the use of that agent as a latent image developer. The later involvement of Herschel in Talbot's legal action against a professional photographer named James Henderson in 1854 is described, and some recently-found correspondence between Talbot and Herschel, in the years 1853 and 1854, is fully reported.

Gallic acid and the Calotype process

During 1841, a photographic patent was sealed by W. H. F. Talbot (1800-1877). This was the patent for his Calotype process, a process of considerable importance in the evolution of photography. Unfortunately, the period of fourteen years, 1841 to 1854, over which the patent extended, was not a happy one for the growth of photography in England. To many persons during those years it seemed as if Talbot believed that he held a patent for photography in its entirety; indeed there is much to justify them in that view. We have seen in Part II of 'J. B. Reade and the Early History of Photography', (*Ann. Sci.* 1971, **27**, 47-83) how this unhappy situation regarding the patents came to a head in the years 1852-1854. At this time the Rev. J. B. Reade was brought forward in an attempt to show that Talbot's patent was invalid; the claim was made that Reade had used gallic acid in photographic experiments in 1839, two years before Talbot sealed his Calotype patent. This work of Reade's, it was alleged, was the real source of the discovery of the Calotype process; Talbot having been led to the use of gallic acid after hearing about Reade's experiments in April 1839. This agitation over the patents during the early 1850s would have had comparatively little significance today, except for the fact that it has greatly influenced historian's views of the discovery of development and of the latent image.

‡ *Present address:* []

As we have already seen, Talbot did indeed learn in April 1839 that J. B. Reade had used gallic acid; but there is no particular reason to suppose that this had any direct influence upon Talbot's ideas about the development of a latent image.

J. B. Reade's involvement in events leading to Talbot's discovery of the Calotype process became established in the history of photography to the exclusion of any other influence. Reade's appearance at the Talbot v. Laroche trial, in December 1854 - an event well recorded in photographic literature - was responsible for this. There was, however, another person who could well have been called to give evidence about his own early use of gallic acid; this was Sir John Herschel. But in fact Herschel did not appear in this case; consequently he has not become established in the history of photography, as has Reade, as having influenced Talbot's use of gallic acid.

Sir John Herschel and gallic acid

Herschel's name had, however, been brought forward in this respect before the Laroche trial; this was during the patent agitation of 1852 and, in particular, in May 1854, when Talbot was seeking to obtain an injunction to stop a London professional photographer, James Henderson, from using the Collodion technique for portraiture. The journal *Notes and Queries* took some interest in photography at this period, and in their issue for July 8, 1854, they published three items related to the photographic patent case of Talbot v. Henderson. These items were, firstly, a letter to Talbot from J. B. Reade concerning a statement, by Talbot, that Reade had not used gallic acid as a developer in 1839; and secondly, as representing Talbot's side of the case, *Notes and Queries* printed two affidavits that had been sworn by Sir David Brewster and by Sir John Herschel. Herschel's affidavit was in reply to a statement, made by Robert Hunt and Charles Heisch, that he had published a remark about the use of gallic acid prior to Talbot's work on the Calotype process. Herschel stated, in effect, that he had indeed made such a remark in a paper that he had read to the Royal Society in February 1840; but, he said, this was a minor remark which would not have had any influence upon Talbot's discovery of the development of the latent image. The printing of this affidavit in *Notes and Queries* is the major published reference to the possibility of there being a link between a remark made by Herschel in 1840 and the subsequent discovery, by Talbot, of the Calotype process.

This fact, that Herschel published a minor remark early in 1840 about gallic acid, has been ignored by historians, although there is no reason why this should not have had at least as much influence upon Talbot as a

minor remark about an experiment of J. B. Reade's. Of course, the story of Reade and gallic acid became historically important due to the events of the 1850s. At that time many persons in the photographic world would have been aware that experiments had been made with gallic acid by J. B. Reade; in contrast, published references to Herschel and gallic acid seem to be limited to little more than the publication in *Notes and Queries* just mentioned, to two articles in the *Art Journal* during 1852 and 1854, and Jabez Hogg's *Practical Manual of Photography* of 1853.¹

Attention was drawn to Reade because of his appearance at *Talbot v. Laroche* - a legal action which became legendary to professional photographers, and which entirely overshadowed the Henderson injunction hearing; this is obviously the main reason why Herschel's use of gallic acid prior to 1840 has been overshadowed by J. B. Reade's use of that substance. The Reade/Talbot legend has been persuasive because of the rather nice story about their conversations with Andrew Ross.

1 *Notes and Queries*, July 8th 1854, **10**, 35-6. (A short extract of this was made in *Liverpool Phot. J.*, August 12th 1854, **1**, 110.)

Art J., June 1852, p. 193; August 1854, pp. 236-8. A large part of the 1852 *Art Journal* article is found in exactly the same words in the preface of *A Practical Manual of Photography*, by Jabez Hogg, 4th edn., 1853; this suggests, of course, that Hogg was the author of the *Art Journal* article (although no other evidence has been found for Hogg's connection with that journal).

Jabez Hogg (1817-1899) (*D.N.B.*, 1901, 1st Suppl., vol. ii, p. 432), was an ophthalmologist and microscopist who was also on the staff of the *Illustrated London News*, and other of Ingram's illustrated magazines. He certainly held strong views against photographic patents. The earlier edition (the 2nd, 1845) of his photographic manual differs from the 1853 one, both in having a slightly different title, '*Photography made easy: A Practical Manual of Photography ... by a Practical Chemist and Photographer*', and a different preface; this preface of 1845 called 'The Injustice and Validity of the Patent Considered, With suggestions for rendering such a patent a virtual Dead letter', specially concerns the Beard v. Egerton case and the Daguerreotype patent. Unfortunately, I have been unable to trace any copy of the 3rd edition; this presumably was published before the 1852 *Art Journal* article.

Robert Hunt had been a fairly regular contributor to the *Art Journal* since 1848. He, of all the persons associated with the journal, must certainly 'have been the most knowledgeable about photographic history and techniques; it would be rather surprising if he was not associated in some way with the *Art Journal* editorial articles on the photographic patents; but, in fact, there is no evidence for this. He did, very briefly, mention Herschel and gallic acid in the 1854 (2nd edition) of his *Researches on Light*, p. 84: 'The discovery of the extraordinary property of the gallic acid, in increasing the sensibility of the iodide of silver, is amongst the numerous claims which Mr. Talbot has made to dis. coveries in the photographic art. It must however be remembered that Sir J. Herschel used gallic acid, but not successfully, and that previously the infusion of galls had been employed by the Rev. Mr. Read [sic] with success'. A very brief comment about this subject and Herschel was made also by Hunt in the *Art J.*, February 1856, pp. 49-50.

Herschel, in his affidavit published in *Notes and Queries*, specifically states that he did not influence Talbot's work; but do we have to take his word for this? At the very least, it is surely likely that his remark would have had as much influence on Talbot as an account, by Ross, of Reade's experiment.

There appear, in fact, to be just two recorded occasions on which Herschel specifically mentions the use of gallic acid, as a sensitizing agent, prior to Talbot's experiments of September 1840.

Firstly, Herschel wrote to Talbot on the 28 February 1839²:

'I had been trying various modes of rendering nitrated paper more sensitive - till I read your most curious account of your process, which opens up quite a new view of the subject, and is altogether one of the most singular things I ever saw. You must have hunted down the caprices of these combinations with great perseverance and patience. When I read it I gave up further trials,³ your processes being very simple and complete - I had most hopes of the Gallate of Silver, which is affected by light very differently from its other salts...'

Secondly, Herschel's paper 'On the Chemical Action of the Rays of the Solar Spectrum... and on some Photographic Processes' which was read at the Royal Society in February 1840, and published that summer in the *Philosophical Transactions*⁴ states:

'My first attention was directed to the discovery of a liquid, or emulsion, which by a single application, whether by dipping, or brushing over, should communicate the desired quality [of increasing the sensitiveness of photographic paper]. The presence of organic matter having been considered by some late chemists an essential condition for

2 Letter reproduced in facsimile in 'The origin of the word "Photography": An Historical Letter', I. M. and A. Barclay, *Phot. J.*, September 1937, **77**, 528-531.

3 Herschel had given Talbot considerable details of his experiments during the previous four weeks, and Talbot did respond (one might think a little belatedly), on the 19 February 1839 (letter HS 17.284, Herschel papers, Royal Society), by telling Herschel about his method of 'fixing' with common salt or potassium iodide. Talbot's second paper on Photogenic Drawing, in which he gave information on the chemicals used, had also been read to the Royal Society on 21 February, and published in the *Literary Gazette* and the *Athenaeum* on 23 February.

Herschel does not, in fact, seem to have done any experiments for a month, at this time; his Chemical Notebook (in Photographic Collection, Chemistry Dept., Science Museum, London, and Microfilm B13 Science Museum Library) records on 20 February 1839, 'Got Fox Talbot's letter of Feb 19 and tried his processes by Hydriod Potash and Common Salt...'; then no further experiments are recorded until 24 March 1839.

4 *Phil. Trans.*, 1840, **130** (part 1), 1-59 (the quotation is from Item 27). Abstracts of this paper were also published in *Phil. Mag.*, March 1840, **16**, 239 and April 1840, **16**, 331, and in the *Athenaeum*, 28 March 1840, pp. 254-5; but the remarks about gallic acid are not mentioned therein. The paper was read over three meetings of the Society. The MS of the paper (Royal Society PT 23.1) is marked as having been read up to item 19 on 20 February; item 27 was therefore read on 27 February 1840.

the blackening of the nitrate of silver, I was induced to try in the first instance a variety of mixtures of such organic soluble compounds as would not precipitate that salt. Failing of any marked success in this line, (with the somewhat problematic exception of the gallic acid and its compounds,) the next idea which occurred was that of introducing organized salts of silver into the pores of paper, by first washing it over with an organic, soluble, precipitable salt, with alkaline base, and then with nitrate of silver. Here also no distinct result was obtained.'

We must primarily study the events of 1839 and 1840 if we wish to clarify our understanding of the discovery. of the latent image and development. However, the discussion concerning Herschel's two remarks given above, and regarding the relationship between his and Talbot's work of 1839 and 1840, will be left until some later events have been reported; this is some correspondence between Sir John Herschel and Fox Talbot that has recently come to light, and that is of considerable relevance to this subject, even though it is of the later - 1854 - period. The correspondence reveals how it came about that Herschel made his affidavit during 1854 about his early use of gallic acid, and it is also of special interest because of the light that is cast upon the relationship between him and Talbot.

Talbot applied to Herschel in 1853 for some assistance over his difficulties with some London professional photographers, who were using the wet-collodion technique for portraiture; Talbot, and his patent licensees, considered this to be an infringement of the Calotype patent. Herschel therefore became involved in the case of Talbot v. Henderson; the preceding article (*Ann. Sci.*, March 1971, pp. 47-83) has already given the background to the Calotype patent cases, and we now deal more specifically with the Henderson injunction of 1854.

*Talbot v. Henderson*⁵

On 27 April 1854 a Mr. Arthur Church visited a photographic studio at 204 Regent Street, London. After asking the woman who approached if paper

5 A published report of the hearing of this case on 26 May 1854 is found in *The Times*, May 27th 1854, p. 11, and was reprinted in Newton's *London J. Arts. Sci.*, 1854, **44** (conjoined series), 457-460.

The account of Talbot v. Henderson given in this article results from a search of Court of Chancery records at the Public Record Office, London. Four classes of Chancery documents have been found, at the P.R.O., which deal with the first (1854) stage of this case: (a) Chancery Cause Book C32/329/Cause 1854, T39.

(b) Chancery Decrees and Orders C33/1023 (Motions 829, 907, 1080, 1094), and C33/1024/1167.

(c) Chancery Proceedings, C15/157/Pleading 1854, T39. This important group of Pleading documents contains the 19 page *Bill of Complaint*, *Interrogation* of 13 June 1854, and Defendant's *Answer* of 1 August 1854; furthermore there are also filed here several Depositions of Witnesses made during the later stages of the case, in 1855 and 1856.

[(d) Chancery Affidavits — continue over to foot of next page 244]

portraits could be taken, he was shown upstairs to the glass studio. There his portrait was taken by the photographer, James Henderson. Well satisfied with his visit, he returned to the studio two days later, paid one guinea, and after casually asking some questions about the technique - the wet collodion process - that had been used, he left with his paper portrait. Mr. Church, who was 'Assistant to Dr. Hofmann,' the Professor of Chemistry at the Royal College of Chemistry,³⁹ had, in fact, been sent to Henderson's studio by a firm of solicitors in Lincolns Inn; consequently it was not many days afterwards that this firm, Price and Bolton, who were the Solicitors of W. H. F. Talbot, also sent one of their clerks along to Henderson's studio. This clerk, Fred Chapman, did not, of course, want his photograph taken; instead, on 6 May 1854, he required Henderson to receive a Bill of Complaint-for Henderson was alleged to have infringed Talbot's Calotype patent, by using the wetcollodion process in taking portraits for sale.

We have already seen, in 'J. B. Reade and the early history of photography; part II' the background to the events that led up to legal action being taken against three London professional photographers - Colls, Henderson, and Laroche - at this period; and we have also seen briefly, on pp. 58-62, of 'J. B. Reade, Part II', how, barely one month after Arthur Church had his portrait taken, that an injunction was granted, on 26 May 1854 in the Court of Chancery, to restrain Henderson from selling paper portraits. The formal Injunction was served on Henderson (again Mr. Chapman went along) on 1 June 1854. Henderson was enjoined to be

'restrained under the penalty of five thousand pounds... from in any manner using exercising or putting in practice the invention of the plaintiff... or resembling the same or any part thereof, in the preparation of portraits... or selling any photographic portraits on paper according to, or by means of, the said plaintiff's Invention or any part thereof, until further Order of the Court...'

Vice Chancellor Wood, who had heard the case on the 26 May, had expressed some doubt about the inclusion of the phrase 'imitating or

[continuation from previous page 243 of footnote 5]

(d) 16 Chancery Affidavits sworn during 1854, all filed in the two boxes of C31/1048; No. 664 sworn by J. H. Bolton, No. 665 N. Henneman, 666 Talbot, 667 Church, 679 Chapman, 706 Hunt and Heisch, 707 A. Normandy, 708 W. H. Thorn. thwaite, 714 Brewster, 719 Henderson, 722 Talbot, 733 Herschel, 800 Chapman 817 Price, 820 Chapman and Maynard, and No. 1111 sworn by Chapman.

resembling' the Invention, 'or any part thereof'; this attitude of the Vice Chancellor's must have greatly encouraged Henderson in his decision to contest the case. Henderson had already during May contacted a number of photographers who had sworn affidavits in his defence. But, of course, Talbot had also been preparing his side of the case. When the injunction was granted on 26 May, he had affidavits sworn by three persons to support him; these were by Nicolas Henneman, Sir David Brewster, and Sir John Herschel. The following correspondence,⁶ between Fox Talbot and Sir John Herschel, can now tell us how Herschel became involved in this.

Letter No. 1, Talbot to Herschel, dated 13 November 1853.

[To] Sir J. Herschel.

Greta Bank, Keswick,
Cumberland.

Nov. 13. 53.

Dear Sir,

I am sorry that my absence from home prevented my sooner receiving and answering your kind letter.⁷

⁶ Uncatalogued letters and papers concerning W. H. F. Talbot's photographic patent legal action of 1854, Talbot v. Henderson, between Sir John F. W. Herschel and [W.] H. F. Talbot; Royal Society Archives, London. [Since the publication of this article these letters have been catalogued in Herschel Correspondence, Box 26, letters 48–52]

I am most grateful to the Royal Society for not only allowing me to study the MS. collections in their library, but also for their permission to publish these letters; special thanks are due to L. P. Townsend, the Society's Archivist, for his indispensable help in bringing these papers to light.

The papers consist of 12 items: Letters, Talbot to Herschel dated 13 November 1853, 15 May 1854, 18 May 1854, with separate draft 'affidavit' (by Talbot) entitled 'Afft. of Sir J. Herschel Bart. ...&c.', 20 May 1854, 23 May 1854 with enclosure of Copy of Chancery Affidavit sworn by Robert Hunt and Charles Heisch, and 26 May 1854; Rough drafts of Letters, Herschel to Talbot, dated 19 May 1854, and 21 May 1854; Letter, Mr. Bolton to Herschel, dated 26 May 1854 with enclosure of Copy of Chancery Affidavit sworn by Sir John Herschel. The letters are quoted in full in this article; the Copy Affidavits are, however, edited slightly.

⁷ Letter at Science Museum dated 7 November. Dr. D. B. Thomas kindly tells me that Herschel asks in the letter if Bowering could publish his portrait that had been taken by an *amateur* using the collodion technique! Herschel and Talbot corresponded extensively between 1826 and 1844, but, it would seem, comparatively rarely after that time. (There are 70 letters from Talbot to Herschel in the Royal Society Collection up to 1844, but, except for this correspondence concerning the Henderson injunction, only 4 letters after 1844) However, Herschel does seem to have written to Talbot earlier in 1853. For E. Ostroff, in 'Etching, Engraving and Photography; History of Photomechanical Reproduction', *J. Phot. Sci.*, 1969, **17**, 65-80, quotes a letter from Herschel to Talbot dated 14 May 1853. It appears from this letter (stated to be in the Talbot MS. Collection, Lacock Abbey) that Talbot had early in the year sent Herschel some examples of his photomechanical engravings.

my invention called the Calotype or Talbotype to the Public, reserving to myself a single branch of it (the taking of portraits for sale) in order to recover if possible the money spent upon the invention in various ways.¹¹

But a knot of photographers in Regent St. and elsewhere have conspired together to upset my patent-the case comes on for argument in the Court of Chancery in a few days, when affidavits will probably be made by the opposite side that I am not the inventor of the art, or that at any rate my invention was imperfect & of no utility &c &c &c.

I am advised that 2 or 3 affidavits made by persons of high scientific eminence would outweigh in the mind of the Vice Chancellor a host of affidavits made by obscure persons who speak with little or no authority on the subject.¹²

I have therefore asked Sir David Brewster and Profr. Wheatstone¹³ to make affidavits in my favour which they have kindly consented to do, & if you have no objection to do the same I shall consider my case as established. I may mention that it would only be necessary for you to call at the office of my solicitor in Lincolns Inn at any hour of the day between 10 and 6 on Friday or Saturday next and sign the affidavit, which I hope would not be giving you too much trouble.

But since of course you would like to know first, the contents of the Document, I would send you a draught of it previously. It would state that you believe me to be the inventor of the Calotype or Talbotype process, & that you are acquainted with the principles of the Collodion process, which for reasons assigned you consider to involve the same scientific & photographic principles

11 Talbot told Robert Hunt two years before that he had 'spent £7,000 in his patents, etc., on the art' (Letter dated 5 March 1852, Robert Hunt to Peter Fry, published by J. Dudley Johnston in *J. Roy. Soc. Arts*, 1939, **79**, 832-3). Of course the 'various ways' included, after all, several commercial ventures.

12 Affidavits were sworn 'on the opposite side' by Robert Hunt; Charles Heisch, lecturer in Chemistry at the Middlesex Hospital, and the editor that year of Willat's *Photographic Manual, Plain Directions for obtaining Photographic Pictures ...* (Manual No. 1, part II), London, 1854; W. H. Thornthwaite, author of *A Guide to Photography*, and partner of Horne and Thornthwaite, the Optician's, Instrument and Photographic suppliers of Newgate Street, London. His firm had a close association with F. S. Archer in 1851 (see Archer's remarks in *Notes and Queries*, 25 December 1852, **6**, 612), and were, at first, the exclusive suppliers of his iodized collodion. The firm became a centre for the introduction of the collodion process, and there can be little doubt that they were also a centre of agitation against Talbot's patents. Henderson had applied to them, 'in or about the year 1852' for instruction in the collodion process, and accordingly Fallen Horne had taught him this. (Chancery Affidavit, sworn by Horne, 26 November 1855, P.R.O., C31/1127/1344); Alphonse Normandy, a consultant Chemist, experienced in patent and legal proceedings (*D.N.B.*, 1895, vol. xli, p. 114); and, of course, James Henderson also filed an Affidavit. For Affidavit references see footnote 5 (d) [page 244].

13 Charles Wheatstone (he was not yet knighted) became a vice-president of the Royal Photographic Society on its formation in January 1853. He had taken a general interest in the photographic discoveries in the early part of 1839, and he had corresponded with Talbot at that time. No affidavit by him was filed in the case. [A letter from Wheatstone to Talbot dated 22 May 1854 (Lacock Abbey MSS LA 54.25) shows that Wheatstone avoided giving his support]

as mine, and to conduct to the same result finally, viz. to a positive photograph on paper.

Excuse this trouble, &
Believe me

Ever truly Yours,
H. F. Talbot.

Letter No. 3, Talbot to Herschel, dated 18 May 1854.

[To] Sir J. Herschel.

Athenaeum Club.
Thursday May 18.

Dr. Sir,

You will see by the enclosed [see following draft affidavit] that I do not claim anything with respect to the Collodion process, so far as it was a new invention. I am only defending my Calotype process, & seeking to protect it from infringement.

I enclose a draught of the affidavit, I am in hopes that there is nothing in it respecting which you can hesitate to express an opinion but if there is, I will be much obliged to you to alter the words into such others as you may think preferable.

Believe me

Yours ever truly,
H. F. Talbot.

Please to return the draught to me at the Athenaeum as soon as convenient. I enclose a trifling specimen of my new invention of photographic engraving on steel [see also footnote 7, and E. Ostroff *op. cit.*, 1969] - It is a camera view of the Pantheon at Paris. At first the Camera pictures offered great difficulty in the Engraving, in consequence of the halftints being imperfectly given (because the degradation of light on the Steel plate follows quite a different law from what it does in a common photograph). We are gradually getting over this, and if I only had time at my disposal I should soon I have no doubt arrive at something more worth showing to you. On this specimen can be read with a lens the inscription *Aux grandes hommes la patrie reconnaissante.*

H. F. T.

Letter No. 3a, Talbot's Draft of affidavit proposed for Sir John Herschel.

Afft. of Sir J. Herschel Bart., Master of Her Majesty's Mint, &c.

1. I have for many years paid much attention to optical Science, and I have written treatises [treatises is *deleted*] /memoirs/ [memoirs *substituted in another hand - Herschel's*] on that Science generally, and on different branches of it.

2. I have paid much attention to the art of Photography and have written and published various writings concerning it.

3. I have been acquainted with the Photographic process invented by the Plaintiff, and at first called by him the Calotype process, and described in the specification of his patent ... from the time, or nearly so, of the first publication of it by him, viz. from the year 1841, & I fully believe that he was the first and true inventor of the said Calotype process. And I say that such is the general opinion of scientific men according to the best of my knowledge and belief.

/4. *Vide* another sheet./

[4. Deleted.]

6. I am acquainted with the principles of what has been termed the Collodion process in Photography and I consider it to be a useful & convenient mode of operating. By ye employment of the said Collodion process a greater rapidity of photographic action is frequently obtained, together with a greater precision & clearness in the negative image or picture.

[5. Deleted.]

7. The said Collodion process consists chiefly in a mode of obtaining the negative pictures upon a film or skin of iodised Collodion spread upon glass, instead of obtaining them upon a sheet of iodised Paper according to the plaintiff's invention described in the said specification.

8. In order to obtain photographic portraits upon paper, by help of the said Collodion process, it is necessary to use certain parts of the plaintiff's invention described in his said specifn., more especially, the development of an invisible image. In the Collodion process it is usual to obtain an invisible image upon a film of iodised Collodion and to render the same visible by washing it with gallic acid or with pyrogallic acid.

9. The use of collodion spiled upon glass plates facilitates the process of photographic portraiture but the portraits are finally obtained upon paper, and such paper portraits are of the same kind and nature as those obtained by means of the Plaintiff's invention described in the said Specification, differing only in a greater or lesser degree of precision of outline, and clearness or perfection of details.

[Items 4 and 5 are written on separate sheet.]

(omitted)

4. The said Calotype process comprised a mode of developing an invisible photographic image upon paper, by washing it with gallic acid, and I believe the Plaintiff to have been the first person who discovered the existence of such invisible images upon paper, & the mode of developing them. And I consider that this invention was of great importance to the art of Photography, & that it has been in constant use by photographers ever since the discovery of it.

5. I believe the said Plaintiff was the first person who obtained photographic portraits upon paper.

6. I am acquainted, &c.

Items 1, 2, 3 and 4 are marked with a line down the margin. The word 'omitted', which heads the separate sheet, is in Talbot's hand. Although a similar draft was sent to Brewster (see footnote 15) it is possible that the separate items 4 and 5 were not.

Letter No. 4, Rough Draft, Herschel to Talbot, dated 19 May 1854.

May 19, 1854. To F. Talbot.

My dear Sir,

If you knew how I am beset you would not be surprised at my nonreply or rather delay of reply to your note. I had just written the words in an agenda for today 'be sure & answer F.T.' when I took up your note of yesterday & its enclosed 'affidavit'.

In the first place let me ask whether making any affidavit at all about the matter involves appearing in Court - undergoing a Cross examination - and (as a necessary preparation) going de novo through a course of reading (not of *new* matter to get *new* opinions and *new* facts, but of things once quite familiar now utterly gone glimmering through the mists of things that were - my own old notes (which I hardly know where to lay hands on and [must make a journey into the country and a sojourn there of a week, which I have not disposable, to rout out]) [*deleted*] and all the papers which I read & reflected on when I was actively engaged in photographic experiments) - In short going through a regular process of repairing the breaches that time and inattention (and something of failing memory) have made in that sort of armour of complete preparedness which a man has to put on when he goes down to do battle in a law court.

As a simple act -- I am quite prepared to make affidavit that I believe you to be the inventor of the Kalotype [*sic*] or Talbotype process-the educating a dormant picture by a stimulating wash *nominative* [*sic*] Gallic acid (for I have nothing to say about pyrogallic)¹⁴ which I certainly never heard of till I read it in some of your papers (I cannot now say which - as I have not a book here to refer to). I should however see how it stands described in the Specification of your Patent referred to.

To your No. 5 I am unable to [make affidavit] [*deleted*] say anything. I have no belief in the matter one way or other. I suppose anybody who has made many endeavours at photographic delineation of real objects would try his hand at a portrait. -- [I have an Early one] [*deleted*]

(6.7) As regards the Collodion process I really have not gone otherwise than very superficially into it and there are probably 50 'Collodion processes'. There is no doubt that *that* Collodion process which requires a wash of gallic acid to bring out a dormant picture, employs *pro tanto* your principle but [*the continuation of this passage is deleted*] [I conceive the positive merit of the 'Collodion process' to consist in the exceeding thinness evenness firmness & perfect transparency of a film capable of being spread on glass and of receiving a picture - and that [with its] [*deleted*] you cannot claim this invention which is quite as distinct a subject of patentization as most of the things for which patents are usually granted. — 9. How people proceed *now* to take positives from negatives also this I do not know from any—] there may be distinct patentizable points about it other than yours - and here comes what I conceive to be the point of the whole question

8. It does not appear *essential* that in producing a positive on paper from a negative on glass collodionised your Kalotype process (the development of an invisible [image] [*deleted*] picture) should be resorted to - and as it is perfectly possible to obtain a positive picture on paper from a negative on glass by other means than those described by you (as I suppose) in your specification (as for instance by the destruction of vegetable colours) I cannot make affidavit to No. 8 /and in general with regard to the whole question - /

14 Pyrogallic acid was usually used as the developer in the Collodion process, not gallic acid. F. S. Archer introduced the use of pyrogallic acid in 1850 (F. S. Archer, *The Chemist*, 1850, **1** (n.s.), 360-1 and 450-1); in fact he used it on the albumen on glass technique, before he brought in the Collodion process.

9. I consider that if you have patented a process & that that patent is established by proof of its being your sole invention then, any one who uses that process as part & parcel of any other without a licence infringes your patent, -- but it is not matter of opinion or belief that he does so use it which can *establish* the *infringement* - you must prove by some direct evidence that your process has been used. I can make an affidavit to my belief that your process is very generally resorted to for obtaining [negatives] *[deleted]* positives /and that it makes a part of the Collodion process as I understand that process/ but I cannot swear to the fact that Mr. A or Mr. B does so use it. And I cannot swear that Mr. C or Mr. D uses your process to bring out his negative pictures on Collodion though I know that it is done and I have seen Mr. P and Mr. Q do it. I presume you have to [defend] *[deleted]* maintain your Patent against some specific infringer or defendant - and it is for you to prove by direct evidence that he has used your process.

[I had rather say nothing about the ‘ Collodion process’] *[deleted]* That proved - your aim is established - Affidavits of opinion as regards the Collodion process seem to me to be altogether beside the subject.

I remain, &c.

JFWH

Harley Street, May 19, 1854.

P. S. Many thanks for the Pantheon on Steel. I read the inscription very well. by the bye, what a bald affair the Dome (above the columns) is and the flanking walls! What a noble photograph of Paris from a window in one of the houses just about to be pulled down beyond C[ommun] Street would make!! It is certainly by a long chalk the finest building on Earth so seen.

[To] H. F. Talbot.

Letter No. 5, Talbot to Herschel, dated 20 May 1854.

[To] Sir J. Herschel.

Athenaeum.

May 20 / 54.

Dear Sir,

Many thanks for your letter. I am very sorry to cause you so much trouble, more especially as your time is so fully and usefully occupied.

An affidavit in the Court of Chancery is a thing finished and done with, it leads to no further trouble - as there is no jury and no viva voce evidence, there is of course no cross examination. The affidavit speaks for itself and either produces an effect on the mind of the Vice Chancellor or none, as the case may be.

An affidavit is an expression of personal belief only. To put a parallel case: I could testify, if the occasion for it should arise, that I believe you to have been the discoverer of hyposulphuric [sic] acid, and of the solvent power of that acid, of the salts of silver - My testimony would not be to the *fact*, but to *my belief* of the fact. The fact itself might be quite otherwise, and yet the truth of my affidavit would be unshaken.

Of course we have proof, supported by the necessary affidavits, that the defendant in the present cause infringes my patent by selling portraits which are *prima facie* the same as those produced by my patent process.

His defence is that he uses a different process, viz. the Collodion process.

The reply is that the Collodion process borrows from the Calotype process the essential part of the latter, viz. the development of a latent image by gallic acid. What we wished you if possible to testify was that (*in your opinion*) such development of a latent image

1. was a leading feature of the Calotype process
2. was new
3. was of great importance to photography.

But since you feel scrupulous [sic] about making these assertions we will endeavour to dispense with the necessity of troubling you and I will not apply again unless my solicitor assures me that he feels himself in need of support from high scientific authority. We have Sir D. Brewster's affidavit to the above effect, though in other words.¹⁵

Believe me,

Yours ever truly,

H. F. Talbot.

I am glad you like my little attempt at etching the Pantheon.

Letter No. 6, Herschel to Talbot, Draft dated 21 May 1854.

May 21 / 54.

My dear Sir,

I cannot have the smallest objection to state (and I think I very clearly expressed myself to that effect in my letter) that I believe the development of the latent image by Gallic acid (whether it occur in the Collodion or any other process) on iodized Silver was your invention and as you express it in the three points put in your note just received, was

1. a leading feature of the Kalotype process
2. was new
3. was of great importance to Photography.

It is only as respects the 'Collodion process' that I demurred and really if your defendant sets up a plea that he does *not* employ your process but *another* [viz. one to which he gives a name-] [*deleted*] it is he who is bound to describe that other process and show that yours is *not part & parcel of it*. He might have set up a general denial - and simply pleaded that he did not employ your process [and a different one] [*deleted*] surely he would have been put on proof that it was [underlining of was, deleted] a different one from yours

A. makes photographs for sale

B. prosecutes him / of course on some prima facie evidence of the fact / for infringement of patent *asserting* that he uses his process

¹⁵ Talbot must also have sent a draft of a proposed affidavit to Brewster just as he had done to Herschel; in fact the first half of it must have been the same, for six out of the nine items of Brewster's sworn statement are identical with items proposed for Herschel. Items 1, 2, 3, 5 and 6 together, and 7, of Brewster's affidavit are almost identical with items 1, 2, 3, 6, and 7, respectively, of the draft.

A. denies that he does so & asserts that he uses another. Naming one of which there exist printed and published descriptions of a very circumstantial kind. Since these descriptions can be appealed to with far more effect than the belief of C, D, E, &c., to shew that the process so named involves B's patented principles-& that principle once established carries with it this specific application.

Believe me,
[etc.]
J. F. W. Herschel.

Letter No. 7, Talbot to Herschel, dated 23 May 1854.

[To] Sir J. Herschel.

Athm. Club. Tuesday
May 23 / 54.

Dear Sir,

I am much obliged by your note received this morning.

My opponents only filed their affidavits¹² this morning (having undertaken to do so last Thursday).¹⁶

The principal affidavit is by Mr. Robert Hunt, and as you will see, he introduces your name.¹⁷ I have therefore thought it right to send you a copy of it, and at the same time to ask you for a short affidavit in reply to that part only of Mr. H's affidavit which names yourself (not noticing any other part of it). I have followed partly the wording of the note I received from you this morning - the rest I have drawn up in words that I thought you would be likely to adopt, but if not, pray alter them to others.¹⁸ I find that I need not trouble you to call at Lincolns Inn, for as soon as the words of the affidavit are settled, and you appoint a time, I can call on you with a solicitor either in Harley St of an evening, or at the Mint, at an earlier period of the day.

¹⁶ The Bill of Complaint had been served on Henderson on 6 May; as he had not been warned in any way before that, he did not have very much time to prepare any defence.

¹⁷ Probably no one was more familiar with Herschel's photographic work than was Hunt. He had written to Herschel in December 1839 to tell him about his own photographic experiments; after this first approach by Hunt, they had corresponded extensively during the following decade, and also Herschel had been able to give Hunt a little help in personal matters during that period. They seem, however, to have had little contact in the early 1850s; indeed it is surprising to note that when Hunt sought election to the Royal Society in 1852 his certificate of nomination did not contain Herschel's signature (although he did receive support from Talbot!). For the relationship between Herschel and Hunt see their letters preserved in the Royal Society collection of Herschel papers, letters HS 10.80 to 10.136.

¹⁸ Although the copy of Hunt's affidavit was found in the bundle of this correspondence, a second draft affidavit as proposed for Herschel does not still exist. This is especially unfortunate as Herschel's reply to this letter is also lacking. Talbot's remark about having 'followed partly the wording of the note I received from you...' is a little amusing, for those words were, of course, quoted from his own letter of the 20 May; the three points mentioned are to be found in item 5 of the affidavit that Herschel finally swore on 25 May 1854.

I have just now taken down the Trans^{ns} of the Royal Society for 1840, and carefully reperused your paper and can find no other mention of Gallic acid than that at page 8, which therefore I conclude to be the passage referred to by Mr. Hunt. I think the Vice Chancellor will hear the cause on Friday, therefore tomorrow or Thursday are the days on which I could call on you with a solicitor empowered to take an affidavit. (This is a new arrangement, very convenient for persons engaged in legal proceedings)

Yours very truly,
H. F. Talbot.

*No. 7a, Copy of Chancery Affidavit sworn by Robert Hunt and Charles Heisch; sworn 22 May 1854 in the cause Talbot v. Henderson.*¹⁹

We, Robert Hunt and Charles Heisch say ...

Item 4. . . . the mode of taking Portraits contemplated by the said Plaintiff [Talbot] as described in his [Calotype] specification is limited to the use of sensitive calotype paper for obtaining a negative image, and to the use of gallo-nitrate of silver for obtaining there from a positive image upon ordinary photographic paper.

Item 5. Gallic acid and infusion and tincture of galls had been used for the purpose mentioned in the Plaintiff's specification long before the date of his Patent both by Sir John Herschel and the Reverend J. B. Reade. the first public use of the infusion of nut galls, which is an essential element in the Plaintiff's patented process is due, as we are informed and believe, to the said J. B. Reade, who communicated the fact of his having used such infusion as an accelerator to Mr. Edward W. Brayley, Junior, by letter on or about the 9th March 1839, and the said Edward W. Brayley, as we are further informed and believe, published the information so received by him from the Rev. J. B. Reade at a Lecture delivered by him at the London Institution in or about the same year and exhibited at such lecture specimens of photographs obtained by J. B. Reade by that process. Sir John Herschel also published the fact of his having used gallic acid in a paper communicated by him to the Royal Society on 20th February 1840, and which paper is printed and published in the Philosophical Transactions.

Item 6. The Collodion process was invented subsequently to the date of the Plaintiff's Patent. The invention was not patented.

Item 7. Although the result obtained by the use of Collodion is finally in a measure the same as that yielded by Calotype paper, in as much as both processes eventually produce a picture, yet the collodion process is essentially different from that described in the Plaintiff's specification.

¹⁹ The copy sent to Herschel which is in the bundle of correspondence at the Royal Society was made by Talbot's solicitor; the original affidavit is, in fact, filed at the Public Records Office, Chancery affidavit C31/1048/706. It is not necessary to quote it in its entirety; the Title, the Jurat, and the legalistic and generalized parts of the Statement are omitted. As the affidavit lacks punctuation this has been added, and all the dates are given as figures.

Item 8. That Collodion is not paper nor similar to paper either chemically or physically speaking.

Item 9. That the manipulations for collodion are quite peculiar and cannot, at least most of them, be applied to paper.

Item 10. That the images produced on Collodion are different, and the final results therefrom are better, have a greater sharpness of outline, vigour of tone, and delicacy of tints and half tints, than can possibly be obtained by Calotype, and the first of these processes is much more rapid in its action than the second.

Item 11. the collodion process differs as much from the Calotype as the latter differs from the daguerreotype process.

Item 12. That gallic acid and gallo-nitrate of silver are not employed in the Collodion process.

Item 13. That the Collodion image is developed by the use of either the proto sulphate of iron for which the Plaintiff himself has acknowledged in a communication made by him to the Athenaeum on 6th December 1851²⁰ that 'Science is indebted to Mr Robert Hunt', or by pyrogallic acid....

Item 14. Dormant images obtained by light were developed long previously to the date of the Plaintiff's Patent by M. Niepce in 1827 and M. Daguerre in 1839.²¹

20 This, in the *Athenaeum*, 6 December 1851, pp. 1286-7, was a report by Talbot of the method which he called the 'Amphitype'. It was the subject of his fourth photographic patent (No. 13,664), which was enrolled on 12 December 1851. This patent incorporated the use of albumen on glass (which had first been put by Talbot into his 1849 patent (No. 12,906) even though the Albumen technique had been described by Niepce de Saint Victor in *Comptes Rendus Acad. Sci. Paris*, in 1848) with development with sulphate of iron. Hunt had used ferrous sulphate as a developer in his Energiatype (or Ferrottype) process in 1844. (Published in the *Athenaeum*, June 1844, pp. 500-1, and *Adv. Sci. Brit. Assoc. Report* for 1844, part II, p. 36, and comments by Talbot, p. 105.) The incorporation of the use of ferrous sulphate in Talbot's patent resulted in a little controversy in the *Athenaeum* (3 January 1852, pp. 22-3, and 10 January, pp. 55-6). Talbot's patenting activities must have been a source of irritation to Hunt, although from the evidence available (see for example his letter to Peter Fry about Talbot in 1852, which has been quoted on p. 53 of 'J. B. Reade and the Early History of Photography, Part II') he seems to have been friendly in his attitude to Talbot. Hunt, in contrast to Talbot, always freely published his photographic work; he might also have claimed that the patenting by Talbot of iodised paper could easily have owed its origin to his own published work (*Phil Trans.*, 1840, **130**, 325-34); and he could easily have pointed out that he had spoken in 1840 of the chemical 'disengagement of the light-created picture' - 'the invisible photographic image', but he was obviously ready to acknowledge that his ideas about this would have been derived from the work of others (see mention of Niepce and Daguerre in Item 14).

21 It is difficult to accept that Niepce and Daguerre discovered the idea of the latent image and its development. The empirical use of mercury-forming an amalgam with the silver - in the Daguerreotype process cannot, without ambiguity, be called development; but it would surely have had some significance in preparing the way for such a breakthrough in ideas.

Herschel's reply to Talbot's last letter, with its enclosures, is not now available. He did, however, swear an affidavit before a Commissioner of Oaths (and presumably Talbot also visited him?) at his town house at 32 Harley Street, on the Thursday, 25 May. The hearing did take place, as Talbot thought, on Friday 26 May 1854.

*No. 8, Copy of Chancery Affidavit sworn by Sir John F. W. Herschel; sworn 25 May 1864 in the cause Talbot v. Henderson,*²²

Item 1. I have read a copy of an Affidavit sworn in this cause by Robert Hunt and Charles Heisch... in which my name is mentioned in the following terms, viz., 'Sir John Herschel also published the fact of his having used Gallic Acid in a paper communicated by him to the Royal Society on February 20th 1840 and... published in the Philosophical Transactions.'

Item 2. I say that the inference attempted to be drawn to the prejudice of the Plaintiff from my Memoir... is erroneous in as much as in the experiments there referred to I did not use Gallic Acid for the purpose of developing a dormant picture,²³ not being then aware that any such dormant picture then existed, but only with a view to increase the sensitiveness of the paper.

Item 3. I say that my memoir above referred to extended to nearly Sixty pages, and that Gallic Acid is only once named in it, to the best of my recollection, videlicet, at page eight, in the following words. 'My first attention was directed to the discovery of a liquid, or emulsion, which by a single application, whether by dipping or brushing over, should communicate the desired quality. The presence of Organic matter having been considered by some late Chemists an essential condition for the blackening of the Nitrate of Silver, I was induced to try in the first instance a variety of mixtures of such organic soluble compounds as would not precipitate that Salt. Failing of any marked success in this line (with the somewhat problematic exception of the Gallic Acid and its compounds) the next idea which occurred was...'

Item 4. I say that in writing the passage of my memoir above quoted, I did not contemplate the Photographic process since called the Calotype process, nor was I then acquainted with that process.

²² This copy of Herschel's affidavit was made by Talbot's solicitor. The original affidavit is filed at the Public Record Office, Chancery Affidavit C31/1048/733. As with Hunt's affidavit, the Title and Jurat of the affidavit have been omitted. It was also published six weeks later in *Notes and Queries*, 8 July 1854, **10**, 35-6.

²³ This use of the words 'dormant picture' rather than latent image, is interesting; for Herschel did speak in his 1840 memoir of 'the picture, though invisible, is only dormant'. However, he was *not* speaking of the latent image and development, but of the picture that had been made invisible, and dormant, by having been treated with corrosive sublimate (mercuric chloride); this could be 'instantly revived in all its force by merely brushing it over with a solution of a neutral hyposulphite' (*Phil. Trans.*, 1840, **130**, p.6 (item 19)).

Item 5. I say that I have been acquainted with the Plaintiff's invention called the Calotype process from the time, or nearly so, of its first publication in 1841, and that I consider the leading feature in the Plaintiff's said invention to have been the discovery of the existence of invisible Photographic images upon paper and the mode of making them visible described by the Plaintiff. And I say that such invention was a new one to the best of my judgment and belief, and that it was of great importance in Photography and that it has continued to be used by Photographers ever since the time of its publication.

The day after Herschel signed the affidavit it was presented, in support of Talbot's case, before the Vice Chancellor. Immediately afterwards, Talbot's solicitor, J. H. Bolton, sent Herschel his copy of the affidavit, and also briefly reported the result of the hearing. Talbot wrote the same day to tell him more of what happened:

Letter No. 8a, Mr. Bolton to Sir John Herschel, dated 26 May 1854.

Lincoln's Inn,
26th May 1854.

Mr. Bolton presents his complements to Sir John Herschel & begs to enclose copy of his affidavit as desired. Mr. B. begs to acquaint Sir John, that the Motion for an Injunction was heard today by V. C. Wood and an order for such Injunction was made as prayed ---.

[To] Sir John Herschel Bart.

Letter No. 9, Talbot to Herschel, dated 26 May 1854.

[To] Sir J. Herschel.

Athenaeum,
May 26 1854.

Dear Sir,

Altho' I believe my Solicitor informed you of the successful issue of our application to the Vice Chancellor, yet I think you would like to hear of some curious circumstances which occurred with respect to the affidavit with which you so kindly favoured me. When this was read, it was seen that it distinctly negated the assertion of Mr. R. Hunt, or rather the inference which he drew from your exp^{ts}. published in the Phil. Trans^{ns}. for 1840. The opposing counsel could not get over this, so what did he do? He took up a volume in his hand and said, I shall be able to show your honour (the Vice Chancellor) that this discrepancy is more apparent than real, there is an important passage in this volume which will enable me to offer a satisfactory explanation to it; -- And then, after greatly exciting our curiosity about this important passage, he added a few rather vague and unmeaning sentences, and then suddenly diverged to another topic, and never opened the volume at all!

The judgment of the Vice Chancellor was exceedingly clear calm & luminous, befitting the judicial bench.

I remain, Dr Sir,

Yours very truly,
H. F. Talbot.

On the same day Talbot also wrote (in his diary?²⁴):

‘Court of Chancery. We are completely successful against a defendant of the name of Henderson who has been infringing my patent by taking portraits in Regent Street. The case was argued for three hours before Vice Chancellor Wood. The affidavits of Brewster and Herschel demolished the defendant’s case.’

But in spite of Talbot’s glowing report of the Vice Chancellor’s hearing this is not borne out by the report of the case in *The Times*⁵. The Vice Chancellor had, in fact, some doubts about granting the injunction: he said, ‘it was quite clear that there was a serious point to be tried at law between the parties’. *The Times* reported him as saying that ‘He should grant the injunction - but he felt some doubt as to that part of the order which asked to restrain the defendant from imitating and resembling the plaintiff’s invention, or “any part thereof”.’ Talbot’s counsel pointed out, however, that those words had been copied from the order made by the previous Vice Chancellor in an earlier similar case.²⁵ Vice-Chancellor Wood therefore thought that, because of this earlier ruling, the Order must stand; ‘but a question had been raised... as to whether the ‘Collodion’ process was an infringement of the patent... There was sufficient before the Court, to show that an action must be tried.’ The counsels were directed to undertake this action immediately.

The two other affidavits that had been presented at the hearing in support of Talbot, by Nicolas Henneman,²⁶ and by Sir David Brewster,^{15, 27} made statements about the Collodion process; but, as we have seen, Herschel studiously refrained from giving any opinion about this.

The case was not pursued forthwith, as directed; for it was decided to hold it over until after the result of Talbot’s more urgent action against Martin Laroche was known. In that action the jury did find that

24 ‘William Henry Fox Talbot, F.R.S.: Material towards a Biography’, collected by J. Dudley Johnston, edited by R. C. Smith, *Phot. J.*, December 1968, **108**, 361-371. The passage quoted is stated to have been written on 26 May, although there is some confusion in the article about the year in which it was written; it was obviously not written in 1851 as stated, but in 1854.

25 He was, in fact, referring to Talbot v. Colls, 22 January 1852: see ‘J. B. Reade and The Early History of Photography: Part II’, pp. 52-53.

26 Chancery Affidavit sworn 6 May 1854, P.R.O., C31/1048/665.

27 Chancery Affidavit sworn 24 May 1854, P.R.O., C31/1048/714. Brewster’s affidavit was also published (with Herschel’s) in *Notes and Queries*, 8 July 1854, **10**, 34-5. He was staying in London at the time, and swore the affidavit in the chambers of Talbot’s solicitor. Item 8 (‘I consider the said collodion process to be only a variation or modification of the plaintiff’s said invention, called by him the Calotype, for [four following reasons]...’) is the most important part of his statement concerning the Collodion process.

Laroche's use of the Collodion process could not be deemed an infringement of the Calotype process. It seems that later in the year Talbot inquired if Sir David Brewster would also be prepared to give evidence at the Laroche hearing; Brewster replied that he could not go to London unless his evidence was essential, and, as Talbot did not think this was so, he took no part in that trial.²⁸

Obviously Herschel's attitude regarding the Collodion process made it unlikely that he would be an effective witness at the Laroche hearing. Before that action was heard in December 1854, Talbot wrote to W. T. Brande to ask if he would consent to give evidence, and mentioned that 'Herschel has an objection to appearing in court and therefore it is not our intention to ask him'.²⁹ It is even more unlikely that Herschel would have appeared at the Laroche trial, when we remember that his health was very poor in the latter part of 1854.³⁰

This correspondence of Talbot and Herschel during 1854 is of some interest because of the fresh glimpse that we are able to get of their personal relationship. With this in mind, it is worth looking back fifteen years, to the time (1839) when they were writing often to each other about the then 'new art' of photography. It is a common experience for the reader of this earlier correspondence to be struck by the difference between these two men. 1839 was a tense time for Talbot. He had been giving some attention to photographic experiments since 1834, and the announcement of Daguerre's invention obviously shattered his own hopes of astounding the world; one can certainly feel some sympathy for him in this. But his Photogenic Drawing technique was not, in fact, such a startling achievement, although Talbot was obviously anxious that it should be so acknowledged. Indeed biographers of Talbot have sometimes expressed surprise that he did not receive greater recognition in 1839; the answer is that his contemporaries were, quite simply, more able to estimate the true extent of his achievement at that time. However, we should not perhaps forget the genuine regard that Herschel had for Talbot's Photogenic Drawing sensitization. It must have been disappointing for Talbot to observe the ease with which Herschel tackled the problems involved in the first steps in photography during the first few weeks of 1839. Herschel communicated information about his early experiments with a frankness that is noticeably lacking on Talbot's

28 Talbot's evidence at *Talbot v. Laroche*, *Phot. J.*, 21 December 1854, 2, 88.

29 MS letter in George Eastman House Collection, quoted by Beaumont Newhall, *Latent Image*, New York, 1967, pp. 129-130.

30 See his diary for that period (MS. *Copy of Herschel's Diary, 1848-1860*, MS. 585, Royal Society, London), and *Literary Gazette*, 5 May 1855, p. 284.

side;³¹ Herschel's letters are characterized by an easy openness, while Talbot's sometimes possess an undercurrent of agitation and anxiety. It is interesting to note that the 1854 correspondence also shows, to some extent, the same features.

Talbot's comment, in his letter of the 20 May 1854 about Herschel's discovery of hypo, lacks a little tact; one wonders if he would ever have considered, that the remark could, in some circumstances, have been misunderstood? It is illustrative of an interesting facet of his nature, that he was able to offer a compliment in such a guileless manner.

Certainly this new correspondence enables the affidavits of Brewster and Herschel to be seen in a fresh light; for the statements that they contain resulted from the considerable prompting of Talbot.

Herschel's attitude in 1854 towards his early use of gallic acid was most reasonable. There is no reason to suppose that he, any more than J. B. Reade, had any concept of latent image development before Talbot published this. Herschel's work in general during 1839 and 1840 was of influence on Talbot. Leaving aside speculation regarding any influence that Herschel might have upon Talbot's realization of development, we can certainly ask a more limited question: did Herschel's use of gallic acid in 1839 prompt Talbot to experiment with that chemical? Consideration of this question must wait until a later paper.

Finally, we must not forget that there was another man involved in the events of 1854;

James Henderson.

In 1848 Henderson started to practise as a Daguerreotypist in Fleet Street, London, moving in 1851 to 184 Strand. Around 1852 he had thought that the public demand for the Daguerreotype had dropped, and he therefore took lessons in the wet-collodion technique. Stimulated by the 'falling-in' of his house in the Strand in September 1853, he decided to move to 204 Regent Street and to include portraits on paper as part of his trade. He paid out £120 for a year's lease at Regent Street, fitted out the studio for £100, and spent about another £100 on advertising: but, he said, 'had not held myself out as a taker of Photographic Portraits on paper for more than three weeks before I received the Notice of Motion for an Injunction',³² 'and the whole sum I

31 Some attention has been drawn to the relationship between Talbot and Herschel during 1839 in H. Gernsheim's 'Talbot's and Herschel's Photographic Experiments in 1839', *Image* [GEH], September 1959, pp. 133-37, and in R. S. Schultze's 'Rediscovery and Description of Original Material on the Photographic Researches of Sir John F. W. Herschel, 1839-1844', *J. Phot. Sci.*, 1965, **13**, 57-68 (pp. 62-4 relevant). Both of these articles had restricted terms of reference; and as the writers had incomplete access to other Herschel/ Talbot correspondence further scrutiny of the subject is required. Attention will be given to this in a later paper.

32 Chancery Affidavit, sworn 4 June 1855, P.R.O., C31/1126/749.

have received for them has not exceeded the sum of £14.’³³ Talbot’s solicitors took the first steps in the action within two weeks of the granting of the injunction, and for several weeks pressed Henderson to prepare his defence speedily. At this time a proposal was made to set up a Defence Fund for him.³⁴ However, as Talbot’s proceedings against Laroche were certain to be heard first, the solicitors finally agreed, at the beginning of November 1854, to let all proceedings regarding Henderson stand over until after the action against Laroche had been tried. When Martin Laroche won his case in December 1854 the solicitors of Talbot and of Henderson agreed that the litigation should not be pursued. But Henderson’s solicitor pressed for compensation for his client, and did not agree with Talbot’s representatives that Henderson should bear any of the legal costs (about £150) that he had so far incurred. Luckily, at the time when the injunction was granted the Vice Chancellor had agreed to the suggestion of Henderson’s counsel that ‘a condition might be imposed upon the plaintiff of making compensation to the defendant, if he [Talbot] failed in the action’. Accordingly, on 6 June 1855, a Motion was filed in Chancery after a hearing before the Vice Chancellor to enable Henderson to be awarded damages and compensation. A second stage of the case *Talbot v. Henderson* thus began.³⁵

33 Chancery Affidavit, sworn 25 May 1854, P.R.O., C31/1048/719.

34 *Notes and Queries*, 24 June 1854, 9, 598-9. In fact a Fund was set up for Martin Laroche. Donations to the Fund, organised by W. H. Thornthwaite, had, by April 1855, reached only £105, although Laroche’s legal expenses were between £400 and £500 (*Art. J.*, April 1855, p. 127).

35 Court of Chancery documents at the Public Record Office, London, which deal with the second (1855-1856) stage of *Talbot v. Henderson* are:

(a) Chancery Decrees and Orders, C33/1031/Motion 943, C33/1031/Order 1154, C33/1038/840.

(b) Two Chancery Affidavits sworn on 4 June 1855 by James Henderson and his lawyer, John Mead, filed in box C31/1126; affidavits No. 749 Henderson, 752 Mead.

(c) Nine Chancery Affidavits, sworn during November 1855, all filed in box C31/1127; consists of five affidavits on Henderson’s side, No. 1236 Henderson, 1344 F. Horne, 1345 A. Normandy, 1346 J. P. Bourquin, 1347 T. Mackern; and four affidavits on Talbot’s side, 1348-9 T. Donnithorpe (solicitor’s clerk), 1350 A. Claudet, 1351 N. Henneman.

(d) Two Affidavits sworn on 6 and 10 December 1855 by James Henderson, C31/1215/294 and 295.

(e) Chancery Proceedings, C15/157/Pleading 1854, T39. As well as containing items concerning the 1854 stage of the case, this ‘Pleadings’ group of documents includes ‘Depositions of Witnesses’ made during 1855 and 1856:

Deposition filed 6 July 1855, sworn on 30 June 1855 by J. H. Bolton; Deposition filed on 4 August 1855, sworn on 30 July 1855 by James Henderson; Deposition of N. Henneman sworn 30 June 1855; five Depositions filed 7 February 1856, which were sworn on 5 February 1856 by A. Normandy, F. Horne, J. P. Bourquin, A. Claudet, and J. Henderson.

It is hoped that it will prove possible in the future to publish transcripts of many of these *Talbot v. Henderson* Documents; they are a source of most interesting information about the Calotype patent and professional portraiture in London during the early 1850s.

At this time, Henderson was no longer living in London. A few months after the granting of the injunction in 1854 he began to feel the strain of his situation: he did not renew the lease of his Regent Street studio when it was due in October 1854, and, on the advice of his doctor, 'removed to Hampstead for change of air'. During the summer of the following year he went to live at Brighton, and later may have moved to Launceston, Cornwall.

Both sides prepared their case during the summer of 1855; facts and opinions were gathered about the extent of damage, if any, which had been caused to Henderson's business by the granting of the injunction. Talbot's side asked to examine his business receipts. Many accounts were not still available, but it was shown that his gross receipts for the taking of portraits averaged £31 per month; this was both for the 10 months before the granting of the injunction, and for the remaining five months at Regent Street after that time. It was also necessary to estimate what damage to his business there would have been in 1855; although anyone else could use the collodion technique after the Laroche verdict in December 1854, Henderson could not legally do so, for the injunction against him was still in force.

In November 1855, both contestants again arranged for affidavits to be sworn for them by their supporters, and in February 1856 those witnesses were cross examined about their opinions. On Talbot's side, Antoine Claudet³⁶ and Nicolas Henneman alleged that Henderson would not have received any increase of income by selling paper portraits rather than Daguerreotypes. Furthermore, they insisted that his income in 1855 would have been very drastically reduced because of the large number of photographers who were using the Collodion process since the Laroche verdict. Henneman gave a very gloomy picture of his own business to support this argument. There were, he complained, about twenty photographers then practising the Collodion process in Regent Street. Before December 1854 he would not have liked to have sold his business in Regent Street for under £4,000 or £5,000; but the great increase in competitors using the Collodion technique, due to Laroche's winning his case against Talbot in that month, meant that the value of his business had been greatly reduced. He said, 'I would not like to sell up under £2,000 or £3,000 now'. This was six months after Talbot v. Laroche. No doubt this argument was considered a useful one to put forward; but it is ironic that the facts consequent upon Talbot's losing his case against Martin Laroche should be used as a weapon against Henderson.

36 Claudet's studio was also in Regent Street, at No. 107, on the opposite side to Henneman and Henderson. For biographies of Claudet (1797-1867) see *D.N.B.*, 1887, vol. *xi*, p. 2; 'Claudet -- a Memoir' by Joseph Ellis; *Phot. J.*, August 1868, **13**, 101-8; A. T. Gill, *Phot. J.*, December 1967, **107**, 405-9.

On the other hand, Henderson claimed that he was stopped by the injunction in 1854 from establishing a good and lucrative business in taking portraits by the collodion technique. He said: 'If the damage I have sustained by the consequences of the Injunction... is to be estimated in money, I consider that the plaintiff ought to pay me at least £500'. His supporters variously suggested that he should be entitled to £300 or £400 for loss of profits.

On 18 March 1856 a decision on the case was reached by Vice Chancellor Wood:

It is Ordered³⁷ that the Plaintiff, William Henry Fox Talbot, do... pay the Defendant the sum of £150, being the amount of damage ... And it is Ordered that the Plaintiff's Bill do stand dismissed out of the court with costs to be taxed... ; the costs of all the defendant's Witnesses are to be taxed and allowed as ordinary witnesses and not as Scientific Witnesses.³⁸ And it is Ordered that the Plaintiff William Henry Fox Talbot do pay to the said James Henderson the Costs when taxed.

Henderson's legal costs were later found to be £180. 16s. 4d.⁴⁰ Talbot was to pay this as well as his own expenses.

³⁷ Chancery Decrees and Orders, P.R.O., C33/1038/840. This, and other extracts in this article quoted from Crown copyright records of the Court of Chancery in the Public Record Office, appears by permission of the Controller of H. M. Stationary Office.

³⁸ Expenses paid to 'Scientific Witnesses' were not normally allowed as legal costs. In the 1854 stage of the case Henderson had incurred expenses of about £30 for Scientific Witnesses: A. Normandy (see footnote 12) fits this description.

³⁹ See page 244. Mr. Church was, in fact, the nineteen-year-old student and assistant who became Professor of Chemistry at the Royal Agricultural College and later at the Royal Academy: Sir Arthur Herbert Church, F.R.S. (1834-1915), obituary in *J. Chem. Soc.*, 1916, **109**, part 1, 374. (I am indebted to J. Bentley, who has recently published a study of the Royal College of Chemistry in *Ambix*, 1970, **17**, 153, for his help in identifying Church). Church was at the Royal College of Chemistry in Oxford Street from 1851 to June 1855. The affidavit regarding his visits to Henderson's studio was sworn before John Thomas Church who was, of course, formally described as 'a London Commissioner to administer Oaths in Chancery', but who was, in fact, his own father, a solicitor of Bedford Row.

With Church in the College laboratory was another famous pupil and assistant of Professor Hofmann, Sir W. H. Perkin, with whom Church published work two years later. But of particular interest are two other assistants or demonstrators -- John Spiller and Sir William Crookes -- who were at the College at this period. Spiller and Crookes published their papers concerning a 'Method for preserving the Sensitiveness of Collodion Plates' etc., at the time of Talbot v. Henderson, in May and July 1854 (*Phil. Mag.*, 1854, **7**, 349; *Phot. J.*, 1854, **1**, 205, and **2**, 6). Both Crookes and Spiller became editors of photographic journals. Crookes was assistant at the College from 1850 to 1854, and also collaborated later with Church. He could easily have been well aware of the events concerning the Calotype patent, for he was associated with Charles Wheatstone and his family home and business was at 143 Regent Street. *The Life of Sir William Crookes*, by E. E. F. D'Albe (London, 1923) contains a letter of 1858 from Talbot to Crookes regarding patents.

⁴⁰ Chancery Certificate of Costs dated 27 June 1856, P.R.O., C38/2345/Trinity 1856, Talbot v. Henderson, filed 1 July 1856.

So, almost two years after the granting of the injunction to stop Henderson from using the Collodion process for taking portraits for sale, and with Henderson to receive £150 damages, the case of Talbot v. Henderson came to a close.

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