R. Derek Wood

Fourteenth March 1839, Herschel's key to photography, the way the moment is preserved for the future

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Introduction

The author holds that the Fourteenth of March 1839 is the most significant date for the beginning of photography.

Typesetting of the printed book has been readily accepted as a technology of incalculable significance, yet, in what must be called the world of learning, photography has strangely not received the same recognition. Directly a camera shutter is operated it captures a moment that is already the past. All photographs involve a sense of the moment and a sense of the past. History is integral to the ethos of photographs. Yet the study of the early history of photography has been of low quality, the historians of the subject themselves have not captured the first moments well. The subject is beset by a tangle of historiographically created problems and confusions. Popular works about the discovery of photography have absorbed fourth generation journalistic accounts derived from earlier third and second generation books in which the authors have made little attempt to go to contemporary prime sources to attempt to verify or adjust the received version. In many aspects of general history a comparatively wide stream of information can become incorporated into the received wisdom of the text books, but in a narrower subject like the discovery of photography there is greater danger that one source might capture the stage. What can be termed the 'Talbo–centric' version has become widely accepted as the early history of photography. It requires more space than is available here to discuss fully the historiographic route by which this version of history came about, but one reason why such popular accounts of the beginnings of photography have been resistant to adjustment is the inherent and unfortunate chance that the events of the first months after the announcement in Paris in January 1839 about Daguerre's creations were not straightforward. Photography got off awkwardly on a wrong foot and the historian is presented with a difficult task of technical explanation that does not make easy reading at the very opening of his account. Consequently that task is avoided and an easy route is taken which irretrievably spoils the history, and in its turn creates further historiographic problems. If this were not so then 14 March 1839 would be a date significant to a far greater number people than it is. For it is due only to the chance way that history has been written that has obscured the supreme importance of Sir John Herschel's 14th March 'Note on the Art of Photography, or the application of the Chemical Rays of Light to the purposes of Pictorial Representation'.

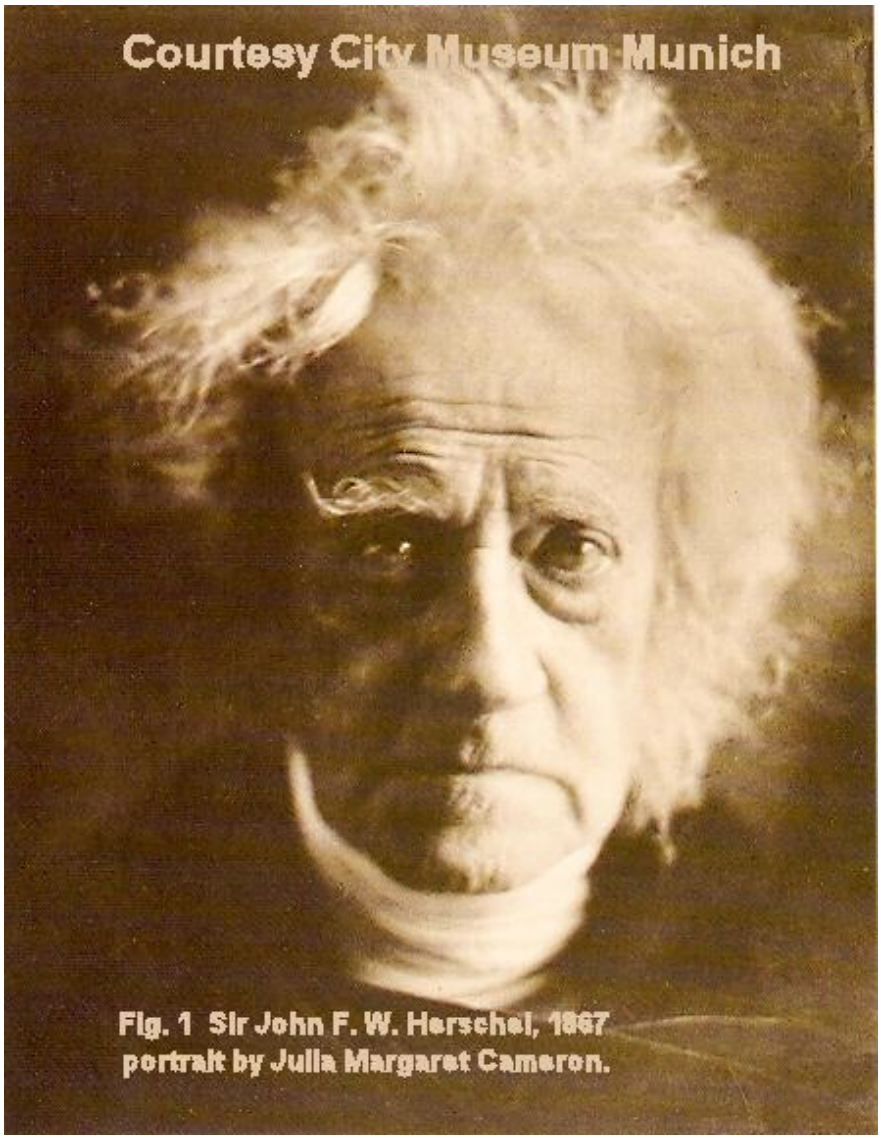

Fig. 1 Julia Margaret Cameron . *Sir John F. W. Herschel,* 1867.Albumen print, 26.7 x 33.6 cm. City Museum Munich

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2. 'On the Male Organs of some of the Cartilaginous Fishes,' by John Davy, M.D.

In this paper, which is wholly occupied with anatomical details, the author refers to his paper on the torpedo, which was published in the Philosophical Transactions for 1834; and also to Müller's work, 'De Glandularum Secernentium Structura Penitiori,' whose descriptions and views are not in accordance with those given in that paper. In the present memoir he adduces evidence of the accuracy of his former statements, and offers some conjectures respecting the functions of several organs found in cartilaginous fishes, but does not pretend to attach undue importance to his speculations.

March 14.—J. W. Lubbock, Esq. V.P. and Treas. in the chair.

The Rev. Charles Turner, M.A. and William Sharpey, M.D. were proposed as candidates. G. W. Featherstonhaugh, Esq. was re-elected; and Clement Tudway Swanston, Esq. was elected a Fellow.

The following papers were read:—

1. 'An Experimental Inquiry into the Formation of Alkaline and Earthy Bodies, with reference to their presence in Plants, the influence of Carbonic Acid in their generation, and the equilibrium of this gas in the atmosphere;' by Robert Rigg, Esq. Communicated by the Rev. J. B. Reade.

The object of the author in the present memoir is to show, that the solid materials which compose the residual matter in the analysis of vegetable substances, and which consist of alkaline and earthy bodies, are actually formed during the process of fermentation; whether that process be excited artificially by the addition of a small quantity of yeast to fermentable mixtures, or take place naturally in the course of vegetation, or of spontaneous decomposition. His experiments also tend to show, that this formation of alkaline and earthy bodies is always preceded by the absorption of carbonic acid, whether that acid be naturally formed, or artificially supplied. He finds, also, that different kinds of garden mould, some being calcareous, others siliceous, and others aluminous, exposed in retorts to atmospheres consisting of a mixture of carbonic acid gas and common air, absorbed large quantities of the former, combining with it in such a manner as not to afford any traces of this carbonic acid being disengaged by the action of other acids. He considers the result of this combination to be the formation of an alkaline body, and also of a colouring matter. This combination takes place to a greater extent during the night than during the day: and in general, the absorption of carbonic acid by the soil is greatest in proportion as it is more abundantly produced by the processes of vegetation; and conversely, that it is least at the time when plants decompose this gas, appropriating its basis to the purposes of their own system. Hence, he conceives, that there is established in nature, a remarkable compensating provision, which regulates the quantity of carbonic acid in the atmosphere, and renders its proportion constant.

2. 'Note on the Art of Photography, or the application of the Chemical Rays of Light to the purposes of Pictorial Representation,' by Sir John F. W. Herschel, Bart.

The author states, that his attention was first called to the subject of M. Daguerre's concealed photographic processes, by a note from Capt. Beaufort, dated the 22nd of January last, at which time he was ignorant that it had been considered by Mr. Talbot, or by any one in this country. As an enigma to be solved, a variety of processes at once presented themselves, of which the most promising are the following:—First, the so-called de-oxidizing power of the chemical rays in their action on recently-precipitated chloride of silver: secondly, the instant and copious precipitation of a mixture of a solution of muriate of platina and lime-water, by solar light, forming an insoluble compound, which might afterwards be blackened by a variety of agents: thirdly, the reduction of gold in contact with de-oxidizing agents: and fourthly, the decomposition of an argentine compound, soluble in water exposed to light, in an atmosphere of peroxide of chlorine, either pure or diluted. Confining his attention, in the present notice, to the employment of chloride of silver, the author inquires into the methods by which the blackened traces can be preserved, which may be effected, he observes, by the application of any liquid capable of dissolving and washing off the unchanged chloride, but of leaving the reduced, or oxide of silver, untouched. These conditions are best fulfilled by the liquid hyposulphites. Pure water will fix the photograph, by washing out the nitrate of silver, but the tint of the picture resulting is brick-red; but the black colour may be restored, by washing it over with a weak solution of hyposulphite of ammonia. The author found that paper impregnated with the chloride of silver was only slightly susceptible to the influence of light; but an accidental observation led him to the discovery of other salts of silver, in which the acid, being more volatile, adheres to the base by a weak affinity, and which impart much greater sensibility to the paper on which they are applied—such as the carbonate, the nitrate, and the acetate. The nitrate requires to be perfectly neutral; for the excess of acid lowers, in a remarkable degree, its susceptibility. In the application of photographic processes to the copying of engravings or drawings, many precautions, and minute attention to a number of apparently trivial, but really important circumstances, are required to insure success. In the first transfers, both light and shadow, as well as right and left, are the reverse of the original; and to operate a second transfer, or by a double inversion to reproduce the original effect, is a matter of infinitely greater difficulty, and in which the author has only recently ascertained the cause of former failures, and the remedy to be applied. It was during the prosecution of these experiments that the author was led to notice some remarkable facts relating to the action of the chemical rays. He ascertained the contrary to the prevailing opinion: the chemical action of light is by no means proportional to the quantity of violet rays transmitted, or even to the general tendency of the tint to the violet end of the spectrum; and his experiments lead to the conclusion, that, in the same manner as media have been ascertained to have relations *sui generis* to the calorific rays, not regulated by their relations to the rays of illumination and of colour, they have also specific relations to the chemical spectrum, different from those they bear to the other kinds of spectra. For the successful prosecution of this curious investigation, the first step must consist in the minute examination of the chemical actions of all the parts of a pure spectrum, not formed by material prisms, and he points out, for that purpose, one formed in Frauenhofer's method, by the interference of the rays of light themselves in passing through gratings, and fixed by the heliostat. He notices a curious phenomenon respecting the action of light on nitrated paper; namely, its great increase of intensity under a certain kind of glass strongly pressed in contact with it—an effect which cannot be explained either by the reflection of light, or the presence of moisture, but which may possibly be dependent on the evolution of heat. Twenty-three specimens of photographs made by Sir John Herschel accompany this paper; one a sketch of his telescope at Slough, fixed from its image in a lens, and the rest copies of engravings and drawings, some reverse, or first transfers, and others second transfers, or re-reversed pictures.

SOCIETY OF ANTIQUARIES.

It is impossible to give any such Report of the proceedings of this Society as would be satisfactory to ourselves or to the public. Last session one of the Fellows, a little ashamed of the figure the Society cut in the published reports, resolved, as he said, to do it justice in the *Athenæum*; but when, at the conclusion of a twelvemonth, he looked carefully over the results of his labours he was obliged to confess, that his zeal had been profitless. Here is a summary of the no-progress since our last! —Mr. Roeser has exhibited a brass stag, which he conceives to have been part of a candlestick, and two jugs, &c., from Etruria.—Mr. Doubleday a figure in *terracotta*, found in digging a sewer in Fenchurch Street —Mr. Agnew a plan of, and copies of inscriptions

Fig. 2 *The Athenæum*, 23 March 1839, 223

J. W. F. Herschel's paper suggesting hyposulphites ('Hypo') for fixing photographic images was read at the meeting of the Royal Society at Somerset House, London, on Thursday 14 March 1839. At the end of the following week it was published in the weekly *Athenæum* of 23 March [1], see figure 1. This use of Hypo (as it has been known to photographers since [2]) was immediately taken up in practice. For indeed how else would photography have been possible then and since! Herschel's paper was also printed in the *Proceedings of the Royal Society* [3] (the Issue in which it appeared covered the meetings of 14 February–21 March 1839 and was probably sent out to Fellows during April), and in the May issue of *Philosophical Magazine* (published by Taylor and Francis).[4] It was also translated into German in the June issue of *Neue Notizen aus dem Gebiete der Natur– und Heilkunde*.[5] In France, Herschel's solution to the problem of preserving light sensitive silver-salt images by use of hypo had surprisingly become known even earlier than his communication to the Royal Society in London. With Herschel's permission, Talbot had written on 1 March to J. B. Biot in Paris briefly describing Herschel's use of sodium hyposulphite. The letter quickly reached Paris, was read by Biot at the Académie des Sciences meeting of 4 March 1839. The full text of the letter was published in the Académie's *Comptes–rendus* [6], but was absent from reports of the meeting that appeared in the general newspapers and intellectual journals of Paris.

Yet the version of the history of photography propagated in the standard histories lost sight of the obvious fact that Hypo was immediately used in England in 1839. For example, C. T. Downing comments on his own experience of its use in a letter dated 8 April 1839 published in the London *Literary Gazette*, as does also Alfred Smee five weeks later in the same journal of 18 May 1839. Both these examples were published within a few weeks of Herschel's paper, but it could be argued that Herschel is not specifically cited by Downing or Smee. The most significant example in 1839 that Herschel's paper of 14 March 1839 was responsible for the immediate introduction of hypo as a photographic fixer — and for the later situation of forgetfulness — is to examine the earliest photographic activities of the chemist J. T. Cooper, (junior)., especially as a few years later Cooper was pretending (there was an ulterior motive) that the events of 1839 had not happened!

Cooper's venture

John Thomas Cooper [7] was 'Resident Chemist' at the Polytechnic Institution in Regent Street where he gave public lectures and demonstrations. When details of the daguerreotype technique became known later in 1839 he also demonstrated that process to the public at the Polytechnic,[8] and indeed was afterwards particularly associated with the daguerreotype in the early 1840s by operating with J. F. Goddard the important Daguerreotype studio set up there by Richard Beard. In March 1839 Cooper began to produce 'Photogenic Drawing Paper' for sale to the public. Packets of twelve octavo sheets were sold for five shillings along with 'directions for use'. They

were sold through three optical and instrument shops in London and advertised in the weekly *Athenæum*.[9] In the first three advertisements of 16 March, 30 March, and 13 April, no mention was made of the chemicals used, but on the fourth and last appearance on 20 April 1839 of the advertisement he specifically mentioned 'Cooper's Preserving liquid for fixing the drawings in bottles 3/6 each'. The following month Cooper was presented with a medal by the Society of Arts, 'for his Method of preparing Paper for Photographic Drawings'. The way he prepared the sensitised paper on a large commercial scale was published in his communication dated 19 May to the Society of Arts in their *Transactions* .[10] He stated with regard to 'Fixing':

> The only method of rendering the photogenic drawings permanent is, I am convinced, by removing the whole of the silver (with the exception of the oxide that forms the picture) from the paper.. This is effected by what Sir John Herschel proposes for the purpose, viz. a solution of the hyposulphite of soda.

From the account given above, it would seem difficult to comprehend how anyone could deny that Herschel's early work was not published in 1839 and in particular to deny that his most important advice to use hypo as a fixing agent was not of immediate consequence. Even so, it is somewhat surprising that six years later even Cooper himself was not too embarrassed to pretend otherwise. This happened at an early stage of a long legal action taken by Richard Beard, the owner of the British daguerreotype patent, to stop John Egerton using the technique at his studio in Temple Street, off Fleet Street, London.[11] John Thomas Cooper and his father (of the same name and a chemist of high reputation through the 1820s and 1830s), combined on 21 May 1845 to swear a 3–page affidavit [12] in support of Beard's case. After first making some general remarks about the daguerreotype process and the patent they stated

> John Thomas Cooper of N^{o}·82 Blackfriars Road in the county of Surrey Consulting Chemist and John Thomas Cooper the younger of the same place Chemist make oath and saith ... that the solution of hyposulphite of soda for the purpose mentioned in the said specification was new and unknown in this country for that purpose [13] prior to the date of the said Letters Patent and that hyposulphite of soda is very useful and valuable for that particular purpose.

The crux of the matter can be highlighted by posing what for the present writer is still a despairing question: are we really going to continue to incorporate into the standard histories of photography a version of the introduction of Hypo which accords more with Cooper's statement of 21 May 1845 rather than the actual events and his own actions and words of 19 May 1839?

There is no certain evidence as to how or when exactly Cooper first heard of Herschel's use of Hypo. It was not a practice at the Royal Society to list the names of all the Fellows who attended the general meetings except for a requirement to record any 'stranger' brought to the meeting by

Fellows. On 14 March 1839 there were twelve such non–fellows.[14] There is evidence that 'Mr Cooper' was present at the important meetings of the Royal Society held on 31 January, 14 February (indeed two Mr Coopers on this occasion), perhaps on 21 February (not listed as a stranger but at this meeting, as well as Talbot's paper, a second paper by J. T. Cooper [Senior?] concerning a water barometer was read), and on 28 February, but not indeed on 14 March. [15] It would appear therefore that J. T. Cooper had acquired his knowledge about hypo not from being amongst the privileged persons at the reading at the Royal Society, but from the publication of Herschel's paper as available to a wide public. For Herschel's research during the first weeks of 1839 did indeed become immediately available to the public.

In 1864 Alfred Brothers of Manchester, who was researching on the early years of Photography, wrote to Sir John Herschel asking if he could clarify his part in the discovery of the use of hyposulphite for fixing. In his reply dated 29 October 1864, Herschel drew attention to his work on the chemical properties of hyposulphites published in 1819, to his first use of hypo to fix photographs as recorded in his notebook in January 1839 and quoted briefly from the passage about hyposulphites 'printed in the notices of the proceedings of the Royal Society of March 14, 1839'. It is quite common to find that reminiscences looking back over a quarter of a century provide inaccurate and untrustworthy sources for later historians. However, even in this situation, Herschel demonstrates his exceptional qualities, for he does not provide a reminiscence, but quotes from his notebooks of 1839. As Alfred Brothers took care to publish Herschel's account not long after in the *British Journal of Photography* [16] it is a text that, like the report of Herschel's paper published in the *Proceedings of the Royal Society* and *Athenæum* in 1839, can be counted as a classic in the writing of photographic history.

It is one of the oddities of past writing of photographic history that entirely for historiographic reasons the influence of Sir John Herschel in 1839 has been misrepresented. In recent decades a better balance has been reached, but it is still not unknown for an old idea that Sir John's simple mastery of both the chemistry of the photosensitivity of silver salts, and the properties of 'hyposulphite', as expressed at the Royal Society in London on 14 March 1839, was not published at the time to have some credence. This historiographic situation has been responsible (particularly in a context of uncritical acceptance of a story derived from Talbot's self publicity) for a lack of widespread recognition of Herschel's supreme contribution to the creation of photography. Therefore it is necessary here in a second part of the article to discuss some of the central aspects of this historiographic misrepresentation.

Part 2 — Note on Historiography

A paradox exists in the historiography of subject: when many historians point to a first use of the word Photography it is to Herschel's 14 March paper at the Royal Society, yet the same paper does not exist when the first use of hypo is discussed!

Probably the idea in historical writings that Herschel's work was not published in 1839 first obtained currency from some words of Sir David Brewster published in an unsigned article on 'Photography' in *The North British Review* in August 1847. Brewster mistakenly spoke of the fixing of photographs by the Rev. J. B. Reade in 1839 with Hyposulphite of soda, 'which', said Brewster, 'has since been universally used as the best, and was afterwards suggested **in 1840** by Sir John Herschel'.[17] A thoughtless passage by Brewster, which was passed on again by himself in the following decade in an influential eighth edition of the *Encyclopaedia Britannica*. This in its turn was immediately a source of facts dispensed by writers such as John Timbs in his *Stories of Inventors and Discoverers of Science and the useful arts* of 1860. A typical reappearance in the late twentieth century of such statements can be found in a popular account of the history of photography when the *Sunday Times* of London in September and October 1978 published a very copiously illustrated series on 19th century photography under a title of 'Photodiscovery'.[18] In the text was the following: 'After Daguerre published his process in August 1839, Sir John Herschel suggested a fixing solution of hyposulphate [*sic*]'.[19] No matter who amongst the panel of advisors for the *Sunday Time*s series in 1978 was responsible for this nonsense that Herschel did not publish until after August 1839 and after Daguerre (!), they were inheritors and propagators of a typically incorrect line of the history of photography found in popular accounts, derived from previous historical writings without making any attempt to look at prime contemporary sources.

How is it these mistakes were not subject to more revision in the late 19th and early 20th centuries? Sad to say, a great deal of writing on the early history of photography has obviously been done in photographic libraries from photographic literature of a date later than the actual events. There are ample signs of events prior to the 1850s being characterised by repeating accounts and reminiscences that had appeared in photographic journals later in the century indexed under 'history'. The year of 1839 has, in spite of its importance, been generally treated in that way, and applies to Herschel's paper of 14 March 1839. It was published, as we have already seen, only nine days later in the influential weekly *Athenæum* of 23 March. Not only has that appearance of Herschel's paper been generally ignored [20], but the report of the 14 March meeting in the *Proceedings of the Royal Society* has gained a special significance in regard to the growth of an idea that Herschel's paper was withdrawn from publication or only an "abstract" ever appeared.

The tenacity of the ideas of abstract and withdrawal in the 20th century can be exemplified from the writing in 1979 of Professor Larry Schaaf after he found the manuscript of Herschel's paper had survived at St. John's College, Cambridge.[21] Schaaf has done some excellent work on primary source material, and thus it might be supposed that he was in a good position to produced the required definitive study of that paper. But that was not exactly realised, as becomes apparent, for example, from the way his article raised some correspondence from H. Mark Gosser.[22] The correspondent in effect pointed out that just as Talbot's paper on Photogenic Drawing was published in the 'Abstracts' of the Royal Society (a fact accepted by everyone, including Schaaf) then so too was Herschel's paper. Dr Schaaf's reply [23] produced nothing but confusion about the identify of the *Abstracts* being the *Proceedings* of the Royal Society by oddly saying 'I did not cite the publication in the Abstracts because this is word–for–word the same as was published in the Royal Society's *Proceedings* (cited) which was printed three years earlier' (!). He then went on to his central justification for saying that Herschel's paper of 14 March 1839 had not been published by pointing out that he had found that the text of the original manuscript was longer (and published only by himself in *History of Photography*), so it 'was not printed in the *Abstracts*... only an abbreviated version of it appeared'.

Obviously Larry Schaaf first came into contact with what might be called the received wisdom that Herschel's paper had not been published – Helmut Gernsheim's article in *Image* of 1959 obviously played its part here (see below), as well as a misunderstanding of Herschel's own words in 1840 – but even though he then during his research enlarged the scope of sources available Schaaf still continued to confine conceptual understanding within those original bounds. As his writing cites sources not considered by earlier historians it might seem to gain an apparent authority, yet he himself merely repeats the same story as the earlier writers without adjustment from the contents of the additional source material. That said, it should be noted that when incorporating parts of his 1979 paper into his later book of 1992, [24] Schaaf does provide a re-assessment that "Herschel withdrew his paper because he felt he was making such regular breakthroughs that the information contained in the paper was already obsolete". A very reasonable and sensible assumption. For after all not only was the "withdrawal" merely relating to the immediate fuller treatment of the subject in the next *Philosophical Transactions.*, but Herschel did indeed have his detailed and ground-breaking work published in the next-but-one issue of the *Philosophical. Transactions* at the beginning of 1840.

Clearly what is required here (after reminding ourselves that figure 1 truly was published in London on 23 March 1839!) is to re–examine some of the historiographic confusion that has accumulated about its contemporary publication or lack of publication! A detailed examination of the publications of the Royal Society is essential.

Royal Society and 'Abstracts'

In 1832 the council of the Royal Society decided to compile and print short abstracts of papers that had been published in their renowned *Philosophical Transactions* going back to 1800. Two volumes were printed (*Abstracts of* ...) covering 1800 to 1814 and 1815 to 1830. From then on proceedings of each meeting (minutes and text of papers read) were to be produced. and published as the *Proceedings of The Royal Society*. The first volume, instead of being numbered Vol. 1 as being a separate series, the subsequent proceedings were counted as Vol. 3 in continuation of the abstracts for 1800 to 1830 that had only just been printed. To help clarify the situation, it is worth quoting from an account of 'The publications of the Royal Society' in the authoritative *Record of the Royal Society of London*:[25]

> The principal scientific publications of the Society of a serial character are the 'Philosophical Transactions' (4to) and the 'Proceedings' (8v) ...
> 'THE PROCEEDINGS OF THE ROYAL SOCIETY': At a meeting of the Council on 10 May 1832 it was 'Resolved – That the printing of the Abstracts of such papers as have been printed in the "Philosophical Transactions" from the year 1800 inclusive be proceeded in; and that the Treasurer and Secretaries be requested to superintend the printing of the Abstracts.' The first volume of these Abstracts, comprising the years 1800 to 1814, was published in the same year, and the Abstracts for the years 1813 to 1830 in the year [1832] following. Up to this point the series presents merely a collection of abstracts arranged in the order of the full papers as they had been issued in the 'Philosophical Transactions'; but with the third volume a new system was adopted, the Abstracts being arranged under meetings and following the order in which the papers were read, the report of each meeting being headed by a brief account of the business which preceded the reading of the papers. The title-page was still 'Abstracts of the Papers printed in the Philosophical Transactions,' a description which was not strictly accurate, since, even so early in the series as the third volume [starting in 1830/1832], many Abstracts were published of papers which never appeared in the 'Philosophical Transactions.'
> With the seventh volume (1854–5) a further change began. Many papers were published in full.

The first appearance under the title of *Proceeding*s is the first issue part number beginning volume 3 on 18 November 1830.[26] But obviously the meetings over about one interim year from that date were not printed shortly after the actual meeting as applied after 1832 when the decision to proceed had been made. That particular situation for those meetings printed in the first pages of the Proceedings is that they retained some of the characteristics of the true abstracts of 1800 to 1830 and probably accounts for a persistence for a while of the term "abstracts". Each issue Number (clearly printed as *Proceedings*) in the mid-1830s covered from between four to six

weekly meetings of the Royal Society, although indeed a descriptive title of 'Abstracts' of the Royal Society was still printed on the volume title page supplied by the printers for the assembled volumes 3 and 4. Herschel's paper read on 14 March appeared in *'Proceedings of the Royal Society*, 1839, No. 37'. This issue contained the six meetings from 14 February to 21 March 1839.[27] When a paper was read at the Royal Society it was thus sometimes published only in the *Proceedings* (the papers of W. H. F. Talbot and of Rev J. B. Reade read at the Royal Society appeared in this way), and, as was routine, in the *Philosophical Magazine*, an independent journal published by Taylor who also printed the *Proceedings* for the Royal Society. However, for work judged of higher status the submitted paper would be first printed in the *Proceedings* with a more detailed article on the subject produced later for the prestigious *Philosophical Transactions of the Royal Society*. Obviously researchers would want their work to be accepted for the long-established *Transactions*, but this would not necessarily give it more public notice: for papers in the *Proceedings* were first published immediately by the publisher/printers, Taylor and Francis in their other journal, the monthly *Philosophical Magazine* that had a much wider public readership. The supposed withdrawal [28] of Herschel's paper would obviously have applied rather to the further production of a more detailed article for the *Philosophical Transactions*. It needs, of course, to be pointed out that in the event the photographic experiments carried out in 1839 by Herschel were indeed published in more detail in *Philosophical Transactions* in 1840!
Indeed, at the beginning of that 1840 paper Herschel's own comment about his March 1839 communication was very open to later misunderstanding to contribute eventually to the idea that it was never published! What he said was "withdrawn from the farther immediate notice" – this (it is necessary to point out) is not the same as saying 'withdrawn from *publication*' ! [29]

An interesting example exists of the way the word 'Abstract' should not be interpreted in a narrow way. One of the most famous books published in the 19th century was consider to be 'an abstract'. The famous author introduced it as 'This abstract which I now publish', yet it consists of 191,000 words. 'I' is Charles Darwin, and 'this abstract' is *The Origin of Species*.[30] Surely few people would consider that Darwin never published his work on evolution because only 'an Abstract' appeared !

Next generation and Sir James Murray

It seems to have been the next generation of the Herschel family who fell prey to the supposed non–publication of John Herschel's communication of 14 March, with a belief that it had only appeared as an 'abstract'. Perhaps a correct description of the publication as the *Proceedings* would not have led to a misconception liable with the alternative anachronistic use of abstract, which from a common use of the term could be taken to mean a very short paragraph, but which could have been seen as a fuller report if the actual publication had been examined. The idea of non–

publication held by some of the family later in the century also entered public consciousness when Sir James Murray, at the time he was seeking help on defining the word 'Photography' for the *Oxford English Dictionary*, wrote to *Notes and Queries* in 1905. [31]

> "Photography." — It is very remarkable that the origin of this well known term should be involved in obscurity. Can any reader of 'N. & Q.' help us bring it to light, and to discover its inventor or introducer?... The earliest instances of its use we have yet come upon occur in the paper read by Sir John Herschel before the Royal Society on 14 March, 1839, entitled, in the *Proceedings*, 'Note on the Art of Photography; or, the Application of the Chemical Rays of Light to the Purpose of Pictorial Representation.' Unfortunately, this very important paper was not published in the *Transactions*, and was subsequently withdrawn, and all attempts to find the original MS. have failed. In the report of the paper in the *Proceedings* the author uses *photography*, *photograph*, *photographic*, as freely as they are used today, without any comment upon them as words, so that the inference is that they were already in general use. ... It is possible that research in journals, newspapers, or ephemeral literature before 1839 would show photography and its derivatives already in more or less common use, and might perhaps enable us to track them to the inventor, or at least to their first known appearance in print.

Of course, Murray was not a historian of photography, but what he wrote (unfortunately) has indeed had consequences in later writings on the subject.

When the Herschel family library was sold at Sothebys in London in 1958 Helmut Gernsheim reported on some of the hitherto private material on sale in an article published in the George Eastman House journal *Image* [32]

The Herschel family had preserved copies of Sir John Herschel's correspondence and Gernsheim picks out 3 letters written to Talbot in 1839 to form the central concern of his article. But the family had also kept letters from the next generation, one being of 1908 to John Herschel's son William from Sir James Murray. This formed the conclusion of Helmut Gernsheim's article in *Image*, and is significant enough to quote in full:

> A letter dated 16 September 1908 from Sir James Murray, editor of the *Oxford Dictionary*, to Sir William Herschel, son of Sir John Herschel, forms an interesting pendant to this correspondence.
>
> *Dear Sir William,*
>
> *I am glad to return to you the two precious documents* [*not stated*]. *My conclusion, after reading all the contemporary literature, was that Sir John Herschel, after getting to know what Talbot had done, generously with-drew his own paper from the Royal Society (& probably destroyed it) in order not to depreciate Talbot's work. He was a* great man *with a* great reputation *already secured and Talbot had his to make, & also to protect himself against the claims of Daguerre. And I feel sure that your father generously withdrew the account of his own contemporary discoveries in Talbot's interest …*

> This letter confirms our assumption, put forward on p. 82 of our *History of Photography* that Herschel withdrew his communication to the Royal Society on 14 March 1839 for Talbot's sake. Herschel's paper was in consequence not published *in extenso* in the *Transactions* of the Royal Society, but only in a shortened version in the far less important *Proceedings*. The text of the full paper has never become known.

In such ways the idea of non-publication goes round and round.

All the author can suggest is for the reader to go back to the beginning of this present article to see how the conclusions about non-publication made by Murray and by Gernsheim do not fit with a study of the contemporary situation of 1839. However they happen to be right to consider Sir John Herschel a great (and modest) man.

Notes

1 Sir John F. W. Herschel, 'Note on the Art of Photography, or the application of the Chemical Rays of Light to the purposes of Pictorial Representation', *The Athenæum,* no.595, 23 March 1839, 223.

2 Sodium Hyposulphite (and Ammonium Hyposulphite) was the chemical nomenclature used in the 19th century and thus 'Hypo' became the familiar photographic term. The compound is $Na_2S_2O_3.5H_2O$, the 19th century term revised to a now long established chemical usage of Sodium ***Thio***sulph***a***te.

3 *Proceedings of the Royal Society* vol. 4**,** no. 37, 14 February 1839 – 21 March 1839, 131–3

4 *Philosophical Magazine* 3rd series, vol. 14, no. 90, May 1839, 365–7

5 'Ueber die Photographie, von Sir John F. W. Herschel', *Neue Notizen aus dem Gebiete der Natur- und Heilkunde* 2nd series, vol. 10: 17 (Nr. 215), Juni 1839, 260–1. The London and Edinburgh *Philosophical Magazine* was cited as the source and the complete text was translated into German.

6 'M. Biot communique l'extrait suivant d'une lettre que M. Talbot vient de lui adresser. Londres, 1er mars 1839'*, Comptes–rendus de l'Académie des Sciences Paris,* vol. 8**,** Seance du Lundi 4 mars 1839, 341. Talbot asked Herschel if he could pass on this private information to Biot and Herschel had given his permission in a letter to Talbot on 28 February 1839. *Moniteur Universel* and *Le Consitutionnel* did not report the meeting of 4 March, while *La Quotidienne* and Dr. Donné in *Journal des Débats* did report on some aspects of the meeting but not on Talbot's letter referring to Herschel's fixation with hyposulphites.

7 John Thomas Cooper, Jnr., was born in 1815 but date of death and obituaries have not been found. However, for his father John Thomas Cooper [Senior] (1790–1854) there is an obituary in *Gentleman's Magazine,* vol. 42**,** November 1854, 521, and for his younger brother Daniel Cooper (1816–1842) naturalist and editor of *Microscopical Journal and Structural Record*, see *Dictionary of National Biography,* vol**. xii,** 1887, 141. Especially because of the long chemical expertise of J. T. Cooper senior, it seems reasonable to assume that both father and son could have been involved in the production of the 'Photogenic Drawing paper' and Hypo ('Cooper's Preserving liquid') in 1839.

8 An anonymous description of one of Cooper's public demonstrations of the Daguerreotype technique

at the Polytechnic in October 1839 appeared in *The Mirror of Literature, Amusement, and Instruction*, [vol. 35?] N$^{O.}$ 973, 19 October 1839, 257–8. There is no historical work that specifically deals with Cooper's daguerreotype experiments in the autumn of 1839 but is touched on by R. Derek Wood, 'Ste Croix in London', *History of Photography,* vol. 17, no.1, Spring 1993, 101–7.

9 *The Athenæum*, 16 March 1839, 193; 30 March, 233; 13 April, 265; 20 April 1839, 289.

10 J. T. Cooper, 'Preparation of Photogenic Paper'*, Transactions of the Society for the Encouragement of Arts, Manufacturers, and Commerce,* vol. 52**,** 1839, 193–6.

11 . R. Derek Wood, 'Daguerreotype Shopping in London in February 1845', *British Journal of Photography*, vol. 126**,** no. 45, 9 November 1979, 1094–5.

12 Affidavit of John Thomas Cooper and John Thomas Cooper the younger, sworn and filed 21 May 1845 in the case of Beard v. Egerton in the Court of Chancery. National Archives [PRO]: Chancery Affidavits C 31/691 part I.

13 There must have been a careful and cynical adjustment of the phrase 'that particular purpose' to justify if necessary (although as evidence in Chancery was given by affidavit, Cooper could not be directly questioned) the statement as meaning fixation specifically of daguerreotype plates rather than fixation as a general principle.

14 'Journal Book of the Royal Society', vol. xlviii, 1836–1843, meeting of 14 March 1839 on pp.482–6, manuscript volume at Royal Society, London. Twelve 'strangers' are listed, with nine Fellows who invited them. Includes Lord Albert Conyingham brought to the meeting by Dr Lee, and Mr Smythe brought by Mr Walker. Rev J. B. Reade introduced strangers at several meetings of the Royal Society during 1839 (for example on 21 February), but not on 14 March. However at this meeting was read, as well as Herschel's paper, another paper by Robert Rigg 'communicated by the Rev. J. B. Reade.: 'An Experimental Inquiry into the Formation of Alkaline and Earthy Bodies, with reference to their presence in Plants...', *The Athenæum* N$^{O.}$595, 23 March 1839, 223, and *Proceedings of the Royal Society*, vol. 4**,** no. 37, 14 February to 21 March 1839, 130–131

15 'Journal Book of the Royal Society', vol. xlviii, 1836–1843, 462 (31 January), 469 (14 February), 476 (28 February).

16 A. Brothers, 'Note on the first use of Hyposulphite of Soda in Photography' [text of letter from J. F. W. Herschel dated 29 October 1864], *British Journal of Photography*, vol. 13**,** 18 May 1866, 236.

17 'Photography', *The North British Review*, vol. 7**,** August 1847, 465–504

18 Bruce Bernard (Sunday Times Picture Editor), 'Photodiscovery', *The Sunday Times*, Magazine, 17 Sept. 1978, 56–9; 24 Sept, 47–68; 1 October, 60–74; 8 October, 51–61; 15 October. 60–73; 22 October 52–61; 29 October 1978, 62–73. The advisers were Brian Coe, Sue Davies, Robert Gordon, Valerie Lloyd, and Ann Turner (of BBC television series *Pioneers of Photography*, 1975)

19 *Sunday Times* (London)*,* 1 October 1978, Magazine p. 60.

20 A typical example is a paper devoted to 'Herschel and Talbot: Photographic Research' in the *Journal of Photographic Science*, 1979, where Eugene Ostroff never mentions Herschel's paper read on 14 March 1839

21 L. Schaaf, 'Sir John Herschel's 1839 Royal Society Paper on Photography', *History of Photography,* vol. 3**,** no.: 1, January 1979, 47–60. Regarding "withdrawal" of the paper, it is well worth noting that Schaaf does comment (on pp. 53-54) that "The action of withdrawing a paper was actually not all that unusual or catastrophic. In fact four papers by various authors were withdrawn from publication by the Royal Society in 1839 alone".

22 'Correspondence from H. Mark Gosser', *History of Photography,* vol. 5**,** no**.** 3 (July 1981), 269

23 'Correspondence from Larry Schaaf', *History of Photography, vol.* 5, no. 3, July 1981, 269–70.
As Larry Schaaf speaks of "three years earlier" it seems to indicate he thought the 'Abstracts' were different from the *Proceedin*gs. Maybe such a misconception could have been due to fact that when the separate numbers of the Proceedings were published together as vol. 4, 1837-1843, in 1843 this volume had wrongly printed on the title page "ABSTRACTS OF THE PAPERS PRINTED IN THE

PHILOSOPHICAL TRANSACTIONS..." – a description that had only been true for volumes I and II of the evolving series. That said, the publication in *The Athenæum* of 23 March 1839 and the current No. 37 (14 February to 21 March 1839) issue of *Proceedings of the Royal Society* had not indeed been considered by Schaaf

24 Larry Schaaf, *Out of the Shadows: Herschel, Talbot and the invention of photography,* Yale University press 1992, Chapter III ('Herschel & Talbot in the Spring of 1839'), p. 71

25 Royal Society, *The Record of the Royal Society of London*, London: 4th edition 1940, 178-9.
Also Alan J. Clark in *Notes and Records of the Royal Society*, vol. 46, 1992, 335-345, clarifies the confusing volume title pages of vols 1-6 of the *Proceedings* : "The change from abstracts to proceedings actually takes effect in volume 3 (from 18 November 1830), p.1 being headed 'Proceedings of the Royal Society, 1830-31. No.1'. "

26 On p.18 of Issue No. 2 (23 December 1830 to 27 January 1831) of *Proceedings of the Royal Society*, volume 4 shelved in the library of the Royal Society is a note in pencil by an unidentified hand. It is against a paper by W. A. Cadell read at the meeting of 23 December 1830: "This appears to be the first abstract of a paper that was not printed in the transactions".

27 'PROCEEDINGS OF THE ROYAL SOCIETY. 1839. No. 37' appears as the title on the unpaginated page 123 of the issue covering 14 February – 21 March 1839 (pp. 123–134 of volume 4), and for the following issue of 'PROCEEDINGS OF THE ROYAL SOCIETY. 1839. No. 38' the title appears on the unpaginated page 135 covering the meetings of 11 April–16 May 1839 (pp. 135–146). The gap in meetings between 21 March and 11 April was due to the 'Easter Recess'. Exact date of publication of issue No. 37 is not known, but was most likely in mid April.

28 Royal Society, 'Minutes of the Committee of Papers', vol. 2**,** 1828–1852, 183 (11 April 1839), 185 (25 April 1839). At the 11 April meeting of the Committee of Papers, Herschel's paper was listed as 'Referred' and at the meeting of 25 April listed as 'Withdrawn'. See also comments about the routine proceedings of the Committee of Papers in H. G. Lyons, 'One Hundred Years Ago – 1839', *Notes & Records of the Royal Society*, vol. 2, 1939, 92–107.

29 *Philosophical Transactions* , 1840, vol. 130, 1-59 (and MS at Royal Society, London, PT23.1): section 2 on p. 1, "In a communication to this society, which was read on the 14th of March, 1839, and of which an abstract will be found in the notices of its proceedings for that sitting ... As that paper was (at my own request) withdrawn from the farther immediate notice of the Society [i.e. withdrawn from further ***immediate*** notice in the *Phil.Trans.*], and as the abstract alluded to may not fall into the hands of those who may read the present communication, a brief recapitulation of its contents will be necessary to preserve the connexion by which my inquires have been linked together".

30 Charles Darwin, *The Origin of Species*, London: Murray 1859, 'Introduction'. Darwin had wanted the title to be 'An Abstract of an Essay on the Origin of Species and Varieties through Natural Selection', and he wrote to Charles Lyell on 30 March 1859, 'I am sorry about Murray objecting to the term Abstract, as I look at it as the only possible excuse for *not* giving references and facts in full, but I will defer to him and you.', *Life and Letters of Charles Darwin,* 1887, vol. 2, 153.

31 J. A. H. Murray, [origin of the word] 'Photography', *Notes & Queries* 10th series, vol. IV**,** 4 November 1905, 367.

32 Helmut Gernsheim, 'Talbot's and Herschel's Photographic Experiments in 1839', *Image* (George Eastman House, Rochester, NY, USA), September 1959, vol. 8, 133-7. The article focuses on three letters written by Sir John Herschel to Talbot in 1839. First drawing particular attention to Herschel's letter to Talbot of 12 February 1839, providing its full text. He then quotes most of the two later letters of 24 June and 10 September 1839. The article concludes with what Helmut Gernsheim calls "an interesting pendant", being the letter of Sir James Murray of 16 September 1908 to John Herschel's son, and with Gernsheim's comment, is given in full above.