

**“The New Art,” 2 February 1839**

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From:

*Literary Gazette; and Journal of the Belles Lettres, Arts, Sciences, &c.* (London) No. 1150 (2 February 1839): 72–75.

**FINE ARTS.**

THE NEW ART.

THE great sensation created by the new discovery in the fine arts, which our friends on the other side of the Channel have, with national and personal characteristicness, chosen to call *Dagueroscope*, but which our unpretending countryman, Mr. Talbot (rather than *Talbotscope*), has denominated *Photogenic*, has induced us to bestow further attention upon the subject, which we had the pleasure of first making known to the public. What is done in the *Literary Gazette* to-day will be important, as settling the claim to originality in regard to all parties concerned in this interesting discovery. The favour of a letter from Mr. Talbot (a gentleman so justly honoured in the scientific circles), puts on record the unquestionable dates of his experiments; and we have seen and examined the exquisite specimens which mark his progress and demonstrate his success. The statements are corroborated by the usual Reports from the Royal Institution and Royal Society; which we have not been anxious to give so much in detail, in consequence of our possessing Mr. Talbot's own lucid and unassuming account of what he has achieved. In order to complete the matter, as far as present circumstances admit, we have also, at the risk of repetition, procured the most accurate details of M. Daguerre's process, and the opinion of the French philosophers thereon. As he is recommended to be more secret than Mr. Talbot has been, in order that he may treat with government for his sufficient reward, we cannot, of course, speak more plainly than the somewhat flowery description we have received enables us. But we think enough appears to render it palpable that there is very considerable difference between the materials employed, the means used, and the results. Thus, at the Royal Institution, on Friday evening, were exhibited a variety of specimens of a process invented by Mr. Talbot, but which appears to differ from that of M. Daguerre, especially in this, that Mr. Talbot reverses the natural effect, representing dark objects light, and light objects dark.

Different preparations of silver seem to be adopted—nitrate, chloruret, and probably others; but whoever attains the object most effectually, it is a generous rivalry, and will, we trust, be continued to the end. Mr. Talbot's method of fixing his drawings, so that the sun can effect or alter them no more, is of the utmost value. His copying of engravings (there is a sweet one of Venice), by first getting them with the lights and shades reversed, but then copying from the reversed impression, as before, is singularly ingenious. Figures painted on glass are exquisitely rendered; and an oriel window of many feet square is

reduced to a picture of two inches, in which every line is preserved with a minuteness inconceivable until seen by the microscope.

At present we will not dilate any further on this memorable topic, but beg to suggest experiments with the hydro-oxygen powers of light, or such lights as Lieut. Drummond's—and with this hint alone, request our readers' attention to—

1. Mr. Talbot's Letter.
2. The account of the French Invention,
3. Report of the Royal Institution; and,
4. Report of the Royal Society.

### **PHOTOGENIC DRAWING.**

*To the Editor of the Literary Gazette.*

DEAR SIR,—I have great pleasure in complying with the wish which you have expressed to me, that I would go into some details respecting the invention which I have communicated to the Royal Society; viz. the art of photogenic drawing, or of forming pictures and images of natural objects by means of solar light.

I do this the more readily, on account of the interest with which the scientific public have read the accounts which have recently appeared respecting the discoveries of M. Daguerre, of Paris, in some respects identical with mine—in others, I think, materially different.

Although I am very far indeed from being of the opinion, that

*“Chance rules supreme in the affairs of men;”*

yet I cannot help thinking that a very singular chance (or mischance) has happened to myself, viz. that after having devoted much labour and attention to the perfecting of this invention, and having now brought it, as I think, to a point in which it deserves the notice of the scientific world,—that exactly at the moment when I was engaged in drawing up an account of it, to be presented to the Royal Society, the same invention should be announced in France.

Under these circumstances, by the advice of my scientific friends, I immediately collected together such specimens of my process as I had with me in town, and exhibited them to public view at a meeting of the Royal Institution.\* My written communication to the Royal Society was, from its length, necessarily deferred to the week following.\*

These steps I took, not with the intention of rivalising with M. Daguerre in the perfection of his processes (of which I know nothing, but am ready to believe all that Biot and Arago have stated in their praise), but to preclude the possibility of its being said hereafter, that I had borrowed the idea from him, or was indebted to him, or any one, for the means of overcoming the principal difficulties.

As the process of M. Daguerre is at present a profound secret, even at Paris, it is evident that no one could imitate him here, or exhibit pictures formed in the same way, or depending on the same optical principles, who was not already fully acquainted with a secret, not, indeed, the *same*, but similar or tantamount to his.

That M. Daguerre's pictures will stand the effect of time, is, I suppose, the fact, though I do not find it expressly mentioned in the report of M. Arago (*Comptes Rendus*, 7th January). My own have stood between three and four years. I therefore consider that the principles of the art are firmly laid.

Many instruments have been devised at various times for abridging the labour of the artist in copying natural objects, and for insuring greater accuracy in the design than can be readily attained without such assistance.

Among these may be more particularly mentioned, the *Camera Obscura* and the *Camera Lucida*, which are familiar to most persons; certainly very ingenious and beautiful instruments, and in many circumstances eminently useful, especially the latter. Yet are there many persons who do not succeed in using them, and I believe that few are able to do so with great success, except those who, in other respects, are skilled in drawing.

Up to a certain point, these inventions are excellent; beyond that point they do not go. They assist the artist in his work; they do not *work for him*. They do not dispense with his time; nor with his skill; nor his attention. All they can do is to guide his eye and correct his judgment; but the actual performance of the drawing must be his own.

From all these prior ones, the present invention differs totally in this respect (which may be explained in a single sentence), viz. that, by means of this contrivance, it is not the artist who makes the picture, but the picture which makes ITSELF. All that the artist does is to dispose the apparatus before the object whose image he requires: he then leaves it for a certain time, greater or less, according to circumstances. At the end of the time he returns, takes out his picture, and finds it finished.

The agent in this operation is solar light, which being thrown by a lens upon a sheet of prepared paper, stamps upon it the image of the object, whatever that may chance to be, which is placed before it.

The very foundation of the art, therefore, consists in this—eminently curious—natural fact, viz. that there exists a substance so sensitive to light as to be capable of receiving even its faint impressions. The whole possibility of the process depends upon this; for if no such substance existed in *rerum natura*, the notion of thus copying objects would be nothing more than a scientific dream. Moreover, it is not sufficient that the paper should be so sensitive as to receive the impressions of external objects; it is requisite also, that, having *received* them, it should retain them; and, moreover, that it should be *insensible* with regard to other objects, to which it may be subsequently exposed.

The necessity of this is obvious, for otherwise new impressions would be received, which would confuse and efface the former ones.

But it is easier to perceive the necessity of the thing required than to attain to its realisation. And this has hitherto proved a most serious obstacle to those who have experimented with this object in view.

This was one of the few scientific inquiries in which Sir Humphry Davy engaged, upon which Fortune did not smile.

Either his inquiries took a wrong direction, or else, perhaps, the property sought for was of so singular a nature, that there was nothing to guide the search, or perhaps he despaired of it too soon; however this may be, the result undoubtedly was, that the attempt proved unsuccessful, and was abandoned. As Sir Humphry Davy himself informs us, “No attempts have as yet been successful.”

These words are quoted from his own account in the “Journal of the Royal Institution for 1802.”

The subject then dropped, and appears to have been no more spoken of for upwards of thirty years.

When, in 1834, unaware of Davy’s researches, I undertook a course of experiments with the same object in view, I know not what good star seconded my efforts; but, after

various trials, I succeeded in hitting upon a method of obtaining this desideratum. By this process, it is possible to destroy the sensibility of the paper, and to render it quite insensible. After this change it may be exposed with safety to the light of day; it may even be placed in the sunshine: indeed, I have specimens which have been left an hour in the sun without having received apparent deterioration. A fact, therefore, is thus established which is not without its importance in a theoretical point of view, besides its more immediate application to purposes of utility.

With this kind of paper, eminently susceptible of being acted on by light, and yet capable of losing that property when required, a great number of curious performances may readily be accomplished. The most remarkable of these, is undoubtedly the copying the portrait of a distant object, as the facade of a building, by fixing its image in the Camera Obscura; but one perhaps more calculated for universal use is the power of depicting exact facsimiles of smaller objects which are in the vicinity of the operator, such as flowers, leaves, engravings, &c., which may be accomplished with great facility, and often with a degree of rapidity that is almost marvellous.

The Specimens of this art which I exhibited at the Royal Institution, though consisting only of what I happened to have with me in Town, are yet sufficient to give a general idea of it, and to shew the wide range of its applicability. Among them were pictures of flowers and leaves; a pattern of lace; figures taken from painted glass; a view of Venice copied from an engraving; some images formed by the Solar Microscope, viz. a slice of wood very highly magnified, exhibiting the pores of two kinds, one set much smaller than the other, and more numerous. Another Microscopic sketch, exhibiting the reticulations on the wing of an insect.

Finally: various pictures, representing the architecture of my house in the country; all these made with the Camera Obscura in the summer of 1835.

And this I believe to be the first instance on record, of a house having painted its own portrait.

A person unacquainted with the process, if told that nothing of all this was executed by the hand, must imagine that one has at one's call the Genius of Aladdin's Lamp. And, indeed, it may almost be said, that this is some thing of the same kind. It is a little bit of magic realised:—of natural magic.

You make the powers of nature work for you, and no wonder that your work is well and quickly done.

No matter whether the subject be large or small, simple or complicated; whether the flower-branch which you wish to copy contains one blossom, or one thousand; you set the instrument in action, the allotted time elapses, and you find the picture finished, in every part, and in every minute particular.

There is something in this rapidity and perfection of execution, which is very wonderful. But after all, what is Nature, but one great field of wonders past our comprehension? Those, indeed, which are of every-day occurrence, do not habitually strike us, on account of their familiarity, but they are not the less on that account essential portions of the same wonderful Whole.

I hope it will be borne in mind by those who take an interest in this subject, that in what I have hitherto done, I do not profess to have perfected an Art, but to have *commenced* one; the limits of which it is not possible at present exactly to ascertain.

I only claim to have based this new Art upon a secure foundation: it will be for more skilful hands than mine to rear the superstructure.—I remain, Dear Sir, Yours, &c.

H. FOX TALBOT.

FRENCH DISCOVERY.—PENCIL OF NATURE.

WHO has not admired the splendid and wonderful representations in the camera obscura?—images so clear, so full of life, so perfectly representing every object in nature. These living pictures, by traversing the lens and mirrors, are thrown down with double beauty on the table of the camera obscura, by the radiant finger of light. The new art has been discovered to fix these wonderful images, which have hitherto passed away volatile—evanescent as a dream—to stop them at our will, on a substance finely sensible to the immediate action of light, and render them permanent before our eyes, in traces represented by tints in perfect harmony on each point, with different degrees of intensity.

We must not, however, believe, as has been erroneously reported to the public, with respect to these [ Parisian ] experiments, that the proper colours of objects are represented, in these images, by colours—they are only represented, with extreme truth, by light, and every gradation of shade;—as an oil-painting is given by a perfect engraving, consisting of black lines; or, perhaps, more akin to a design made with mathematical accuracy, and in aqua tinta; for there are no crossings of lines in the designs by the pencil of nature. Red, blue, yellow, green, &c., are rendered by combinations of light and shade; by demi-tints, more or less clear or obscure, according to the quantity of light in each colour. But in these copies, the delicacy of the design—the purity of the forms—the truth and harmony of tone—the aerial perspective—the high finish of the details, are all expressed with the highest perfection. The formidable lens, which often betrays monstrosities in the most delicate and aerial of our master-pieces, may here search for defects in vain. The creations of nature triumph. Far from betraying any defect, the highest magnifier only tends to shew more clearly its vast superiority. At each step, we find new objects to admire, revealing to us the existence of exquisite details, which escape the naked eye, even in reality. Nor can this astonish us when the radiant light, which can only act according to the immutable laws of nature, substitutes its rays for the hesitating pencil of the artist.

M. Daguerre has represented, from the Pont des Arts, and in a very small space, the whole of the magnificent buildings on the right bank of the Seine, including that part of the Louvre containing the grand gallery of pictures. Each line, each point, is rendered with a perfection quite unattainable by all means hitherto used. He has also reproduced the dark mass of Notre Dame, with its immense draperies and Gothic sculptures. He has also taken the view of a building, in the morning at eight o'clock, at mid-day, and at four o'clock in the afternoon, during rain, and in sunshine. Eight or ten minutes at most, in the climate of Paris, is sufficient; but, under a more ardent sun, such as that of Egypt, one minute will suffice. To artists and *savans* who travel, and who often find it impossible to prolong their stay at interesting places, this process must be most welcome.

The French journals, and reports of proceedings, however, admit that these admirable representations still leave something to be desired as to effect, when regarded as works of art. It is singular, they observe, that the power which created them seems to have abandoned them; and that *these works of light want light*. Even in those parts the most lighted, there is an absence of vivacity and effect; and it is allowed, that amidst all the harmony of their forms, these views appear subjected to the sober and heavy tone of colour imparted by a dull northern sky. It would appear, that by passing through the glasses of the optical arrangement of M. Daguerre, all the views are uniformly clothed with a melancholy aspect, like that given to the horizon by the approach of evening.

Motion, it is obvious, can never be copied; and the attempt to represent animals and shoeblacks in action, consequently failed. Statuary is said to have been well defined; but, hitherto, M. Daguerre has not succeeded in copying the living physiognomy in a satisfactory manner, though he does not despair of success.

It could not have escaped chemists, that various chemical products are sensibly affected by light. Some gases may remain together in the dark, without any effect, but a ray of light will cause instant explosion. Other bodies, such as the chloruret of silver, are modified in colour. It at first takes a violet tint, afterwards becomes black. This property would, doubtless, have suggested the idea of applying it to the art of design. But, by this method, the most brilliant parts of the object become discoloured, and the darker parts remain white: this produces an effect contrary to the fact. And again, the continued action of light tends to render the whole dark. Mr. Talbot's method would seem to be based on the use of the salts of silver, with the addition of some substance, or covering, to prevent the further action of light, after the design was complete.

This discovery will doubtless make a great revolution in the arts of design; and, in a multitude of cases, will supersede old methods altogether inferior. The temporary interest of many may, at first, be affected; but whatever has the true character of good, cannot essentially do mischief. The invention of printing soon gave employment to many more than were employed as copyists. Even in our own time, the substitution of steel-plates for engraving, instead of copper, although fifty times as many copies may be taken from them, has, by the substitution of good engravings for indifferent ones, so extended the demand, that more steel-plates are now required than were formerly used of copper.

We must add a few words with reference to science. This newly discovered substance, so easily acted upon by the rays of light, opens a wide field for photometric experiments, which hitherto have been hopeless, more particularly on the light of the moon. M. Arago recalls to our attention some experiments made by himself, jointly with other philosophers, by which the light of the moon (300,000 times less than that of the sun), concentrated by the most powerful glasses, gave no indication of chemical action on the chloruret of silver, nor any sign of heat on the most delicate thermometer. We should be glad to know if any experiments have yet been made with the concentrated light of the moon on the thermo-electrical apparatus, which may be constructed of extreme delicacy. The substance used by M. Daguerre is evidently sensible to the action of lunar light, since, in twenty minutes, he can represent, under the form of a white spot, the exact image of this luminary.

M. Biot, who, from the nature of his labours in the fields of science, takes a lively interest in the discovery in question, and anticipates much from the means afforded by it to carry out the analysis of some of the most delicate phenomena of nature. M. Daguerre has, it is asserted, already discovered some new properties of light, and is still carrying on the investigation.

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#### ROYAL INSTITUTION.

FRIDAY, 25th Jan.—Mr. Woodward, “On a new Apparatus for the Public Demonstration of the General Properties and Laws of the Polarization of Light.” After a brief outline of the undulatory theory of light, Mr. Woodward proceeded to exhibit with the old oxy-hydrogen apparatus, fitted with lenses, the splendid phenomena of polarized light, using tourmaline as the analysing plate. The new apparatus (Godard's) with which he also illustrated nearly the whole phenomena, is of a more simple construction, and much cheaper. The light is polarized by plate glass; for the expensive tourmaline, mica is

substituted; and for the lens, a metallic reflector. This arrangement will tend much to make more generally known the beautiful wonders of this important science. At the conclusion of the lecture, Mr. Faraday directed attention to drawings in the library, sent there by H. F. Talbot, F.R.S., and by him named "Photogenic Drawings." They were of the same character as those of M. Daguerre. The two processes, he observed, of M. Daguerre and of Mr. Talbot, effecting the same objects, may be different, or may be the same. As yet neither is known; and each has been perfected by two scientific experimenters in different countries, without a knowledge of each other's pursuit. The principal object of the exhibition of the photogenic drawings, on this occasion, was meant (as was understood) to establish a date, in order, that should M. Daguerre's discovery be made public previously to the reading, before the Royal Society, of Mr. Talbot's paper detailing his process, no charge of imitation could be brought against Mr. Talbot, in case of identity of process. And that each discovery should be thus proved to be original. No human hand has hitherto traced such lines as these drawings displayed; and what man may hereafter do, now that dame Nature has become his drawing mistress, it is impossible to predict.

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#### ROYAL SOCIETY.

Mr. LUBBOCK in the chair. — A highly interesting paper by Henry Fox Talbot, Esq. was read. It detailed the author's discovery upwards of five years ago, of the new process of delineating objects. From the first volume of the *Journal of the Royal Institution*, it appears that the late Mr. Wedgewood had some idea of the discovery; that ingenious gentleman, in conjunction with Sir H. Davy, made many experiments, but they found all their endeavours to obtain success ineffectual: so much so, that it discouraged them, and would have discouraged the author of the present memoir had he read the remarks of Sir H. Davy, contained in the *Journal* alluded to, prior to the experiments which ultimately led to his invention. At first it consisted in laying the nitrate of silver on paper, and by the means of the camera-obscura and the solar ray acting on the paper, a perfect impression is obtained of any object in half a second; it was found, however, that the image thus obtained, by exposure to the light faded, and after awhile disappeared. By repeated experiments, and the most devoted attention, Mr. Talbot, by what he calls sensitive paper (a great improvement upon that which he originally employed), has overcome this great drawback; pictures he has had in his possession for years are now as vivid as they were when first produced. The image obtained is white, but the ground is beautifully coloured, and readily obtainable, either sky-blue, yellow, rose-colour, or black,—green is excluded; these variations of colour Mr. Talbot considers as so many chemical compounds. Objects the most minute are obtained,—the delicate hairs on the leaves of plants,—the most minute and tiny bivalve calyx,—nay, even a shadow, the emblem of all that is most fleeting in this world, is fettered by the spell of the invention, and remains perfect and permanent long after it has been given back to the sunbeam which produced it; in short, to use Mr. Talbot's own words, the picture is "ended as soon as begun." The extent of the value of this invention cannot at present be anticipated; already the author has applied it with perfect success to the copying of sculpture, engravings, hand-writing; and in every case so complete has been the image, that it has been mistaken for the original. The value of it even now to naturalists and others travelling abroad, many of whom are ignorant of drawing, must be immense. Lord Brougham was present, and paid profound attention to Mr. Talbot's paper.

\* Both noticed elsewhere.—*Ed. L. G.*

[End of text.]

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**EDITOR'S NOTES:**

Both Talbot's letter and the text regarding the daguerreotype are reprinted—with additional introductory text—in *Blackwood's Edinburgh Magazine* (Edinburgh, London) 45:281 (March 1839): 382–91.<sup>1</sup>

The *Literary Gazette* editor speaks of a previous article on this subject as being the first upon this subject. See "The Daguerotype," *The Literary Gazette* No. 1147 (12 January 1839): 28.<sup>2</sup>

In its description of the daguerreotype's quality of imagery, this commentary does reflect some bias against Daguerre. Herschel, however, upon seeing Daguerre's pictures, wrote to Talbot, "It is hardly saying too much to call them miraculous."<sup>3</sup> Nonetheless, the commentator's phrase, "these works of light want light," is a reasonable description of some early daguerreotypes when compared to the later, brilliant examples of a matured process.

1. [http://www.daguerreotypearchive.org/texts/P8390016\\_NEW-DISCOV\\_BLACKWOODS\\_1839-03.pdf](http://www.daguerreotypearchive.org/texts/P8390016_NEW-DISCOV_BLACKWOODS_1839-03.pdf)
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2. <http://www.foxtalbot.dmu.ac.uk/letters/docno.php?number=3875>

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