

## **“Chemical and Optical Discovery,” February 1839**

(keywords: Louis Jacques Mandé Daguerre, François Arago, Jean-Baptiste Biot, Constitutionnel, history of the daguerreotype, history of photography)

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*Journal of the American Institute, a Monthly Publication, devoted to the Interests of Agriculture, Commerce, Manufactures, and the Arts* (New York) 4:5 (February 1839): 276–77.

### CHEMICAL AND OPTICAL DISCOVERY.

A late number of the Paris Constitutionnel contains the following interesting account of an improvement on the properties of the camera obscura. It carries with it internal evidence of truth; and if related in good faith, the discovery will be one of the most important of the age.

At the last sitting of the Academy of Sciences, M. Arago announced one of the most important discoveries in the fine arts that have distinguished the present century; the author of which has already acquired universal reputation by his miraculous diorama—M. Daguerre. It is well known that certain chemical substances, such as chlorate of silver, have the property of changing their colour by the mere contact of light; and it is by a combination of this nature, that M. Daguerre has succeeded in fixing upon paper prepared with the rays that are directed on the table of the camera obscura, and rendering the optical tableau permanent. The exact representation of whatever objects this instrument is directed to is, as every body is aware, thrown down with vivid colours upon the white prepared to receive them, and the rays of light that are thus reflected have the power of acting in the way above alluded to on chlorate of silver, or certain preparations of it. In this manner an exact representation of light and shade of whatever object may be wished to be viewed, is obtained with the precise accuracy of nature herself, and it is stated to have all the softness of a fine aquatint [aquatint—ed.] engraving. M. Daguerre had made this discovery some years ago, but he had not then succeeded in making the alteration of colour permanent on the chemical substance. This main desideratum he has now accomplished, and in this manner has been able, among other instances, to make a permanent chemical representation of the Louvre, taken from the Pont des Arts. M. Arago, in commenting upon this most extraordinary discovery, observed, that a patent would be by no means able to preserve the rights of the discoverer sufficiently to reward him for his efforts; and he therefore urged the propriety of an application being made to the legislature, for a grant of public money as a recompense. M. Biot, on the same occasion, compared M. Daguerre’s discovery to the retina of the eye, the objects being represented on one and the other surface with almost equal accuracy.

What is the secret of the invention? What is the substance endowed with such astonishing sensibility to the rays of light, that it not only penetrates itself with them, but preserves their impression; performs at once the function of the eye and of the optic nerve—the material instrument of sensation, and the sensation itself? In good sooth we know nothing about it. Figure to yourself, says a Parisian contemporary, a mirror which,

after having received your image, gives you back your portrait, indelible as a picture, and a much more exact resemblance. Such is the miracle invented by M. Daguerre. His pictures do not produce colour, but only outline, the lights and shadows of the model. They are not paintings, they are drawings; but drawings pushed to a degree of perfection that art never can reach.

One has heard of writing by steam, but *drawing by sunshine* (or moonshine) is a novelty for which the world is indebted to M. Daguerre, of Paris, the diorama painter. M. Arago and M. Biot, who have made reports to the Academy of Sciences on the effects of M. Daguerre's discovery, have given up all attempts to define its causes. The complaisance of the inventor has permitted us to see these *chefs-d'oeuvre*, where nature has delineated herself. At every picture placed before our eyes we were in admiration. What perfection of outline—what effects of *chiaro oscuro*—what delicacy—what finish! But how can we be assured that this is not the work of a clever draughtsman? As a sufficient answer, M. Daguerre puts a magnifying glass in our hand. We then see the minutest folds of drapery, the lines of a landscape, invisible to the naked eye. In the mass of buildings, accessories of all kinds, imperceptible accidents, of which the view of Paris from the Pont des Arts is composed, we distinguish the smallest details, we count the stones of the pavement, we see the moisture produced by rain, we read the sign of a shop. Every thread of the luminous tissue has passed from the object to the surface retaining it. The impression of the image takes place with greater or less rapidity, according the intensity of the light; it is produced quicker at noon than in the morning or evening, in a summer than in a winter. M. Daguerre has hitherto made his experiments only in Paris; and in the most favorable circumstances they have always been too slow to obtain complete results, except on still or inanimate nature. Motion escapes him, or leaves only vague and uncertain traces. It may be presumed that the sun of Africa would give him instantaneous images of nature objects in full life and action.

[End of text.]

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#### EDITOR'S NOTES:

This is one of four texts (known to this editor) appearing in US press in February 1839. Dated content in this issue (page 278, "Tobacco.—Congress, 24th Feb., 1839") informs us that the issue was published in late February. This text (less the introductory paragraph) also appears in the 28 February 1839 *Pittsburgh Daily Gazette*<sup>1</sup>, the 9 March 1839 *Christian Register*<sup>2</sup>, and in the 29 April 1839 *American Railroad Journal and Mechanics' Magazine*. A variant summary of the *Constitutionnel* text is found in the *Boston Mercantile Journal*.<sup>2</sup> Another account—derived from the *Journal des Debats*—appears in the 23 February 1839 *Boston Daily Advertiser*.<sup>3</sup>

Nowhere in this text appears the term "daguerreotype." Also noted is the statement in the first paragraph that "M. Daguerre has succeeded in fixing upon paper..." This confusion is sometimes found in the earliest reports; it must be kept in mind that Daguerre was experimenting with paper processes as well.<sup>5</sup>

1. See <http://www.lifeinwesternpa.org/lifetime01.asp>

2. *Christian Register and Boston Observer* 18:10 (9 March 1839): 40. (Collection of Gary W. Ewer)

3. See [http://www.daguerreotypearchive.org/texts/N8390006\\_BOST\\_MERC\\_JOURN\\_1839-02-26.pdf](http://www.daguerreotypearchive.org/texts/N8390006_BOST_MERC_JOURN_1839-02-26.pdf)

4. See [http://www.daguerreotypearchive.org/texts/N8390007\\_BOST\\_DAILY\\_ADVERT\\_1839-02-23.pdf](http://www.daguerreotypearchive.org/texts/N8390007_BOST_DAILY_ADVERT_1839-02-23.pdf)

5. See [http://www.daguerreotypearchive.org/texts/P8390012\\_DAGUERRE-PAPER\\_RAILWAY-MAG\\_1839-04.pdf](http://www.daguerreotypearchive.org/texts/P8390012_DAGUERRE-PAPER_RAILWAY-MAG_1839-04.pdf)

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