EXTRAORDINARY CHEMICAL AND OPTICAL DISCOVERY. We find in one of the English papers received by the latest arrivals from Europe, an account of one of the most remarkable discoveries, which has been made during the present age. The account is contained in the Paris Constitutionnel. The discovery was communicated to the Academy of Sciences by M. Arago—and the author of it is M. Daguerre, who has already acquired great celebrity by his wonderful Diorama. It is well known that certain chemical substances, such as chlorate of silver, have the property of changing their color 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 it, 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, as every body is aware, is thrown down with vivid colors, 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 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 engraving—these pictures, however, do not produce color, 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 which art can never reach.

The editor of the Constitutionnel has been permitted to examine some of these curious specimens of art, where nature has delineated herself—which he describes with enthusiasm, in the following language: “At every picture placed before our eyes, we were in admiration. What perfection of outline—what effects of chiaro oscura—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 to 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 natural objects in full life and action."

It is said that M. Daguerre made the discovery some years ago—but he had not then succeeded in making the alteration in color, permanent on the chemical substance. This main desideratum he has now accomplished, but the secret of the invention is unknown.

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