

and to study the beauty of forms yielded by the photographic mirror.

Photography, in multiplying marvellous representations of the beauties of nature, tends to inculcate the taste for artistic productions. There will be fewer bad painters because there will be less and less demand for inferior paintings. Fine works only will be esteemed, and the taste for art will increase in proportion to the value of its productions.

Is it not the same in literature? Who can deny that the more refined and pure it is, the more it educates and disposes the mind to reject whatever has not the stamp of genius?

In an enlightened age inferior literature cannot exist. So the fine arts will be improved by photography. Notwithstanding the alarm of narrow minds incapable of appreciating progress, the discoveries which are based upon science will ultimately produce good, and benefit society. To the painter, photography affords the means of being absolutely correct in design. Reference to photographs in painting portraits, representing draperies, &c., saves immense trouble, and obviates the necessity of long and repeated sittings.

But how can it be said that photography prevents the artist from imparting to his work the impress of genius? Photography is for him only a useful auxiliary.

Nothing, however, can arrest the strides of photography; it extends every day its applications, and gradually invades every art.

Who would have expected that photography was to be the means of sculpture?

Yet, however extraordinary such a prognostication might appear, however difficult at first thought it may be to understand the possible connexion between flat representation of objects and their solid form, it has been proved that from flat photographs a bust, a statue, or other object of three dimensions can be made by a mechanical process without the necessity of the sculptor's copying the original, or even seeing it at all. Yet the result is a perfect fac-simile of the original! Moreover, the work is executed in one-tenth of the time required for modelling by hand.

This beautiful application of photography is called *Photosculpture*, and is the invention of Mr. Willème, an eminent French sculptor.

Before explaining how Mr. Willème was led to this discovery, let me remind you that photography itself was invented by painters of talent, by artists, who, while using the camera obscura for studying the subject of their intended pictures, were struck with the beauty of those natural representations. In contemplating them they naturally desired that the pictures could be permanently fixed. Considering that these pictures were formed by the light reflected by the objects, they essayed to fix them by availing themselves of the known scientific fact that light had the property of blackening certain chemical compounds.

The flash of that idea was enough; their genius and perseverance solved the problem, and they created that art which they desired so much—Photography!

A similar and no less instructive story may be told of photosculpture. Mr. Willème was in the habit, whenever he could procure photographs of

his sitters, of endeavouring to communicate to the model the correctness of those unerring types. But how was he to raise the outlines of flat pictures into a solid form?

Yet these *single* photographs, such as they were, would serve him to measure exactly profile outlines. He could indeed, by means of one of the points of a pantograph, follow the outline of the photograph, while with the other point directed on the model he ascertained and corrected any error which had been communicated to his work during the modelling. What he could do with one view, or one single photograph of the sitter, he might do also with several other views if he had them. This was sufficient to open the inquiry of an ingenious mind. He saw at once that if he had photographs of many other profiles of the sitter, taken at the same moment, by a number of cameras obscuras placed around, he might alternately and consecutively correct his model by comparing the profile outline of each photograph with the corresponding outline of the model. Such was the origin of a marvellous and splendid discovery. But it soon naturally occurred to him that instead of correcting his model when nearly completed, he had better work at once with the pantograph upon the rough block of clay, and cut it out gradually all round in following one after the other the outline of each of the photographs.

Now supposing that he had 24 photographs, representing the sitter in as many points of view (all taken at once), he had but to turn the block of clay, after every operation, $\frac{1}{24}$ th of the base upon which it is fixed, and to cut out the next profile, until the block had completed its entire revolution, and then the clay was transformed into a perfect solid figure of the 24 photographs—the statue or bust was made!

When this is once explained, every one must be struck with admiration at the excellence of the process. It is so sure and so simple, that we are surprised it had not been thought of before. But so it is with the most valuable inventions. They wait until some genius grasps the idea, and conceives how to make them practical.

It will, perhaps, be argued as a defect of photosculpture, that, being the result of a mechanical process, it leaves no opportunity for the display of artistic taste or feeling, and that its productions must therefore be only vulgar and matter of fact. This would be a mistake; because the sculptor, who has to direct the last operation, will exercise his skill in communicating to the model all the refinement with which, as a sculptor merely, he could have endowed it. For supposing the photographs to have been deficient in attitude or expression, in giving the last touches to the model, the sculptor can correct those imperfections. The pantograph of photosculpture will communicate to the clay the true character and the proportions of the object, with all the correctness of the photographs; it will produce a perfect likeness, and it will be necessary to give to this first draught the softness and finish of a work of art. These of course cannot be imparted except by the skilful hand and the intellectual feeling of a true artist. In short, as the model must be touched by a sculptor, it is clear that the sculptor so engaged should be such as will not spoil the work of the unerring