stone, Sir David Brewster;* and a host of others. Under these circumstances we may be permitted to ask, why is it that two pictures, taken by two cameras placed 2½ inches apart, do *not* show sufficient stereoscopic relief? Why is it that we must place the cameras about eight times farther apart than the human eyes are in order to produce the proper relief? When these questions first suggested themselves to me, the following answer occurred to me without at that time being able to prove it to be the correct one; namely, because the lenses in the cameras (¼ size) are twelve times larger than the human lenses (eyes).

In order to ascertain whether this is the correct answer or not, it was only necessary to take two pictures with two cameras having a diaphragm in each, the openings in which are ⅛ of an inch in diameter, that being the diameter of the diaphragm in the human eye. In executing this experiment, I was very much surprised to find that the focal range of the camera was increased to an extraordinary extent. The cameras had been focussed for a house on the opposite side of the street, but the moment the diaphragm was introduced, the sash in the window, which before was invisible, suddenly became as sharp and distinct as the house on which the focus had been previously drawn. Subsequently, on removing the camera to an upper story of my house, it was found that this increase in focal range extended not only from the house towards the camera, but to an equal extent beyond the house. After ascertaining these facts, it became desirable to find out the cause of them. With this end in view, the lenses were removed from the tube, and only the diaphragm remained in the same. You may well imagine my astonishment at finding the pictures of houses and other objects in the street faithfully depicted upon the ground glass! the letters of signs, &c., reversed, precisely as if the lenses had been used. The next step was to ascertain whether these pictures possessed photogenic properties, which was soon done by substituting a metal diaphragm with an aperture of 1-50 of an inch in diameter for the paper one of ⅛ inch in diameter, putting in a coated plate, leaving it remain fifteen minutes, coating it in the usual manner, and a beautiful picture, similar to the one herewith sent, was the result.

It was self-evident now, that we had the means to do that with one camera, for which two were before deemed indispensable, namely, taking two stereoscopic pictures through two apertures situated only 2½ inches apart. But as a quarter size plate is only 4¼ inches long, and as it was desirable to take the two pictures on one plate, two apertures 1-66 of an inch in diameter were made in the metal plate above alluded to, only 2¼ inches apart, and after twenty minutes exposure, the sun shining on the house all the time, the accompanying pictures were the result, thus demonstrating conclusively that two stereoscopic pictures can be taken on one plate with one camera (or dark chamber without lenses) and simultaneously, without either reflectors or refractors of any kind whatsoever! It may here be remarked, however, that the pictures thus taken on one plate are stereoscopic reverse, that is to say, the right picture is on the side where the left one ought to be, and *vice versa*, which can, however, be very readily remedied by cutting the plate in two and pasting them together again properly. This stereoscopic reverse was next attempted to be remedied by placing a reflector before the apparatus, but the only effect produced by this device, was the same as the same reflector produces upon pictures taken by an ordinary camera, namely, making the pictures appear in their natural position, so that letters on signs, &c., could be read correctly.

There is another advantage resulting from this camera; it is this. You may make two, four, six, or more sets of holes in the same camera, either all of the same diameter, by which means you will obtain an equal number of stereoscopic pictures with the number of sets of holes, or you may make one set with apertures of 1-200 of an inch, another 1-100 of an inch, one set 1-70 of an inch, and still another set with 1-25 of an inch in diameter, where you will be certain to obtain at least one set of pictures properly "timed," especially as the other pictures which are not properly timed can be rubbed out before gilding, thus saving the plates.

* Mr. Mascher disclaims, in the July number of the Journal of the Franklin Institute, the merit of having first originated the explanations relating to the distortions of pictures. He refers to an article by Sir David Brewster on that subject, published in vol. xv. *Silliman's Journal*, p. 291.

On the Composition of Eggs in the Animal Series.

The conclusions to which M. M. Valenciennes and Frèmy have arrived with respect to the composition of Eggs in the Animal Series are as follow:—

Conclusions.—We have shown, in three successive communications composing our memoir, the facts established by our researches on the eggs of different animals, belonging to all the great classes of Ovipara. Let us by way of recapitulation, endeavour to state in some general propositions, the most important consequences which seem to be the results of this first work. We have shown:—

1st. That there exist fundamental differences between the composition of the eggs of animals, and that under this collective name of *egg*, designating the product of the ovarian apparatus intended to contribute to the perpetuity of the species, very diverse bodies are comprised, different as possible from one another.

2nd. That among the vertebrated animals, the eggs of birds, of reptiles, and of fish, present in their composition, differences which the simplest analysis cannot mistake, and besides that the eggs of Sauria and Ophidia bear great analogy to those of birds, while the eggs of Batrachia resemble those of the cartilaginous fishes.

3rd. That the eggs of Arachnidæ and insects differ altogether, as to their composition, from the eggs of other animals.

4th. That those of Crustacea, organized for living in water, do not at all resemble those of fish or of other amphibious vertebrata.

5th. That this extends to the eggs of Mollusks.

6th. That these differences correspond not only to classes or orders; that they extend to natural families even, without stopping there, since we have proved that an egg of a cartilaginous fish has not the same composition with that of an osseous fish; but further, that a Carp's egg is very different from a Salmon's egg; that the egg of an Ophidian such as an adder's, does not contain the same principles as those of the Chelonia.

7th. That if the composition of different proximate principles is the same in very nearly allied species, the form and the size of vitellin granules vary in a manner sufficiently appreciable to be able to be recognised and assigned to each species.

8th. That the albuminous substances furnished by eggs of birds, reptiles, fish, crustaceans, present in their chemical properties and in their point of coagulation, differences which permit us to suppose that these bodies are made up of different proximate principles.

9th. That an egg changes its nature,—that its liquids alter considerably at different epochs of its formation, when detach-