

THE SUN.

Whatever relates to the dimensions, or to the present views as to the physical constitution of the central body, has been already given. (*Cosmos*, vol. iv., p. 59–88.) It only remains to add in this place some remarks, according to the most recent observations, upon the *red figures* and *masses of red clouds*, which were specially treated of at page 70. The important phenomena which the total eclipse of the Sun of July 28, 1851, presented in Eastern Europe, have still more strengthened the opinion put forward by Arago in 1842, that the red mountain, or cloud-like *projections* upon the edge of the eclipsed Sun, belong to the outermost gaseous envelope of the central body.* These projections became visible on the Moon's western edge as it proceeded in its motion toward the east (*Annuaire du Bureau des Longitudes* for 1842, p. 457), and disappeared again when they were *covered* on the opposite by the eastern edge of the Moon.

On a subsequent occasion, the intensity of the light of these projections became so considerable, that they could be perceived within the corona through telescopes, when veiled by their clouds, and even with the naked eye.

The form of some of the projections, which were mostly ruby or peach-colored, changed with perceptible rapidity during the total obscuration; one of these projections appeared to be curved at its summit, and presented to many observers the appearance of a freely-suspended detached *cloud*† near the point, and resembling a column of smoke curved back at the top. The height of most of these projections was estimated at from 1' to 2'; at one point it is said to have been more. Besides these tap-formed projections, from three to five of which were counted, there were also observed ribbon-like streaks of a carmine color, extended lengthways, which appeared to rest upon the Moon, and were often serrated.‡

* *Cosmos*, vol. iv., p. 70, note † and §, and p. 79.

† Compare the observations of the Swedish mathematician, Bïgerus Vassenius, at Gottenburg, during the total eclipse of May 2, 1733, and the commentary upon them by Arago, in the *Annuaire du Bureau des Longitudes* for 1846, p. 441 and 462. Dr. Galle, who observed on the 28th of July at Frauenburg, saw "the freely-suspended cloud connected with the curved, hook-formed gibbosity by three or more threads."

‡ Compare what a very expert observer, Captain Bérard, saw at Toulon upon the 8th of July, 1842. "Il vit une bande rouge très mince dentelée irrégulièrement." (*Annuaire du Bureau des Longitudes*, p. 416.) "He saw a very narrow red band irregularly serrated."