

A, and each more deeply involved in the earth's shadow, which occupies the whole space from A, beneath the line A M. Now A just receives the sun's last direct ray, and, besides, is illuminated by the whole reflective atmosphere, P Q R T. It therefore receives twilight from the whole sky. The point B, to which the sun has set, receives no direct solar light, nor any, direct or reflected, from all that part of its visible atmosphere which is below A P M; but from the lenticular portion, P R X, which is traversed by the sun's rays, and which lies above the visible horizon B R of B, it receives a twilight, which is strongest at R, the point immediately below which the sun is, and fades away gradually towards P, as the luminous part of the atmosphere thins off. At C, only the last or thinnest portion, P Q z, of the lenticular sequent, thus illuminated, lies above the horizon, C Q, of that place: here, then, the twilight is feeble, and confined to a small space in and near the horizon which the sun has quitted, while at D the twilight has ceased altogether."

#### MIRAGE.

In consequence of the variable temperature of the atmosphere, it has different refractive powers, and this is the usual cause of that phenomenon called mirage. Light passing through a vacuum, or a medium of equal density, moves in right lines; but when it enters a medium of different densities, in curves. If a ray of light passes from an attenuated to a very dense medium, a portion of light will be reflected, and a part refracted. These several causes acting upon light, bending and distorting its rays, produce a variety of singular optical deceptions, sometimes throwing the images of bodies upon dense clouds, and at other times investing terrestrial phenomena with unnatural and almost magical appearances.

In all climates exposed to an extreme temperature, whether of heat or of cold, the results of unequal refraction are observed. In the deserts of Africa the traveller is often surrounded with appearances which cheer his drooping spirits, with the expectation of soon reaching a place where he may rest himself under the shade of a verdant foliage, and bathe himself in cool streams or widely-expanded lakes; but he gazes on an airy vision, which is less substantial than the morning cloud. And so the chilled traveller in arctic climates