

immense number of bolides and falling-stars were perceived; and that those meteors had everywhere the same brilliancy, throughout a space of 921,000 square leagues.

Astronomers who have lately been directing minute attention to falling-stars and their parallaxes, consider them as meteors belonging to the farthest limits of our atmosphere, between the region of the Aurora Borealis and that of the lightest clouds.* Some have been seen, which had not more than 14,000 toises, or about five leagues of elevation. The highest do not appear to exceed thirty leagues. They are often more than a hundred feet in diameter: and their swiftness is such, that they dart in a few seconds through a space of two leagues. Of some which have been measured, the direction was almost perpendicularly upward, or forming an angle of 50° with the vertical line. This extremely remarkable circumstance has led to the conclusion, that falling-stars are not aërolites which, after having hovered a long time in space, unite on accidentally entering into our atmosphere, and fall towards the earth.†

Whatever may be the origin of these luminous meteors, it is difficult to conceive an instantaneous inflammation taking place in a region where there is less air than in the vacuum of our air-pumps; and where (at the height of 25,000 toises) the mercury in the barometer would not rise to 0.012 of a line. We have ascertained the uniform mixture of atmospheric air to be about 0.003, only to an elevation of 3000 toises; consequently not beyond the last stratum of fleecy clouds. It may be admitted that, in the first revolutions of the globe, gaseous substances, which yet remain unknown to us, have risen towards that region through which the falling-stars pass; but accurate experiments, made upon mixtures of gases which have not the same specific gravity, show that there is no reason for supposing a superior stratum of the atmosphere entirely different from the inferior strata. Gaseous substances mingle and penetrate each other on the

* According to the observations which I made on the ridge of the Andes, at an elevation of 2700 toises, on the *moutons*, or little white fleecy clouds, it appeared to me, that their elevation is sometimes not less than 6000 toises above the level of the coast.

† M. Chladni, who at first considered falling-stars to be aërolites, subsequently abandoned that idea.