

the vapour diminishes. Hence, in high latitudes, the velocity of diffusion must be extreme; and this extreme velocity may be supposed to cause the total quantity of water evaporated in a given time in such latitudes to be considerable, and thus to amply compensate for the small quantity held in solution.

Thirdly. The diffusion of two portions of the same gaseous body or vapour having different temperatures and consequently different specific gravities; like the diffusion of a gaseous body and a vapour, has not we believe been the subject of experiment. But on the supposition that the self-repulsive properties of the molecules of a gas or vapour at different temperatures are different; and that the velocities of diffusion between two such portions of gaseous bodies or vapours have reference to their specific gravities, we may imagine that there is a constant tendency to diffusion between portions of air of different temperatures; as for instance between the warmer and lighter air of the equator, and the colder and heavier air of the poles; between the colder and lighter vapour of the poles, and the warmer and heavier vapour of the equator; or between the colder and lighter vapour of the upper regions of the atmosphere, and the warmer and heavier vapour at the surface of the earth. Nor is it improbable that many natural phenomena which appear to us at present inexplicable, depend upon these tendencies. The diffusive powers of elastic fluids are at present very little understood, or appreciated: they constitute however one of the most interesting and important subjects in physics, and would amply repay whoever would take the trouble to investigate them.

*Page 91, note.*—Light and heat, and indeed all fluids have been stated to possess two kinds of repulsive power: that repulsive power which is common to them as fluids, and which may be imagined to result from the aggregate motions of all the molecules of which they are composed; and that self-repulsive power which we have supposed to depend on the mutual action of the contiguous or alternate molecules of