

Let us now close these illustrations of the molecular arrangement of matter, by enquiring, how far the above suppositions respecting gaseous bodies, accord with their essential properties; viz., with their self-repulsive or diffusive properties; their equable expansion by heat; their increase in volume in the inverse proportion of the force with which they are compressed; and with their similar capacities for heat.

*Of the diffusion of Gaseous Bodies.*—For the facts connected with this most important subject, we are principally indebted to Dr. Dalton and to Mr. Graham; the latter of whom has shown, that when any gas is confined in a vessel furnished with a very narrow aperture, or with a porous plug, an interchange between the confined gas and the external air, immediately begins to take place, through the communicating aperture; and that this interchange continues to go on to a certain point, which, with respect to the same gas, appears to be uniform; but differs in different gases, according to a certain law depending upon the specific gravities of the gases. Different gases, also, whether of the same, or of different specific gravities, and however they may be introduced into the same vessel, speedily become mixed uniformly throughout. These facts evidently indicate a species of self-repulsive influence among the molecules of the *same* gas, which appears to be satisfactorily accounted for