

the hypothesis, that *all gaseous bodies under the same pressure, and temperature, contain an equal number of self-repulsive molecules*: we have now to point out, some of the important consequences, to which this hypothesis naturally leads.

It seems to be satisfactorily established, that bodies, in their gaseous state, combine both *chemically*, and *cohesively*, with reference to their volumes: that is to say, that the same volume of a gas, always combines with either precisely a similar volume of the same, or of another gas; or with some multiple, or submultiple, of that gas; (in other words with twice, or thrice, or half, or a quarter, as much, &c.) but not with any intermediate proportion; and further, that the resulting compound, always has reference by volume, to the original volumes of its constituent elements. Let us take water for example. Water has been shown to consist of one volume of oxygen gas, and two volumes of hydrogen gas; and so invariably, that we cannot suppose water to be formed of any other proportions of these elements. It has been also shown, that the resulting water, if in the state of steam, occupies exactly the space of two volumes; so that one volume has disappeared. Now let us consider attentively, what must have happened during these changes. One volume of oxygen gas has contributed to form two volumes