

which of these series of numbers, or whether any other be employed, so that the same relative proportions be observed among them; but the first series is that most generally adopted, and is upon the whole the most convenient. In the above manner, the *atomic weights*, as they are termed, of all bodies capable of assuming the gaseous form, can be easily obtained; but in those bodies that do not assume the gaseous form in their simple state, but in some state of combination only, we are obliged to deduce the weight of the primary molecule, from that of the compound. Thus carbon, in its elementary state, is incapable of assuming the gaseous form; but combined with oxygen, it forms carbonic acid gas; one volume of which, weighs 22 times as much, as our standard two volumes of hydrogen. Now it has been found by other experiments, that of these 22 parts, 16 are oxygen. The remaining 6 parts must, therefore, be carbon; and accordingly 6, is the number upon our scale representing carbon; and the proportion, with reference to which, this body always enters into composition. In the case of bodies, as for instance lime, which are incapable of assuming a gaseous form, either alone, or in combination, we are obliged to trust solely to analysis; thus common marble, or carbonate of lime, as it is termed by chemists, is found to be composed of 22 parts of carbonic acid, and 28