

our hopes of the future progress of science, and, by pointing out the simplest and most obvious combinations as those which are actually found to be most agreeable to the harmony of creation, to hold out the cheering prospect of difficulties diminishing as we advance, instead of thickening around us in increasing complexity.

(340.) A consequence of this immediate presentation of the law of definite proportions in its most general form is, that its subordinate laws—those which limit its generality in particular cases, which diminish the number of combinations abstractly possible, and restrain the indiscriminate mixture of elements,—remain to be discovered. Some such limitations have, in fact, been traced to a certain extent, but by no means so far as the importance of the subject requires; and we have here abundant occupation for chemists for some time.

341. The determination of the atomic weights of the chemical elements, like that of other standard physical data, with the utmost exactness, is in itself a branch of inquiry not only of the greatest importance, but of extreme difficulty. Independent of the general reasons for desiring accuracy in this respect, there is one peculiar to the subject. It has been suggested (by Dr. Prout), and strongly insisted on (by Dr. Thomson), that all the numbers representing these weights, constituting a scale of great extent, in which the extremes already known are in proportion to each other, as 1 to upwards of 200, are simple, even multiples of the least of them. If this be really the case, it opens views of such importance, as to justify any degree of labor and pains in the verification of the law as a purely inductive one. But in the actual state of chemical analysis, with all deference to such high authority, we confess it appears to us to stand in great need of further confirmation, since it seems doubtful whether such accuracy has yet been attained as to enable us to answer positively for a fraction not exceeding the three or four hundredth part of the whole quantity to be determined: at least, the results of the first experimenters, obtained with the greatest care, differ often by a greater amount; and this degree of exactness,