

## CHAPTER V.

## THE ATOMIC VIEW OF NATURE.

1.  
Recapitulation.

IN the last chapter I have shown how, under the influence of the Newtonian philosophy, the ancient but indefinite ideas of Attraction and Repulsion acquired a definite meaning, and how—at least so far as cosmical phenomena are concerned—the Newtonian Gravitation formula was made the foundation of very successful explanations<sup>1</sup>

<sup>1</sup> I use the word explanation in conformity with the popularly accepted meaning of the term. It is, however, well to remark here that, in the course of our century and greatly owing to the influence of the exact scientific spirit, a change is being gradually introduced into language, which will assist in conveying more correct views as to the objects of science. In England the metaphysical interest has been so long banished from scientific literature, the part also which experiment and observation have played has been so great, that misunderstandings as to the real objects of science have been less frequent than abroad, especially in Germany, where the metaphysical or philosophical interest still largely pervades scientific literature, though metaphysics themselves may be on the decline. There the definition of the science

of mechanics (now more usually termed dynamics in this country), given by Kirchhoff in his 'Vorlesungen über mathematische Physik' (vol. i. p. 1), has marked quite an epoch in the philosophy of the exact sciences. This definition is as follows: "Mechanics is the science of motion; we can assign as its object: to describe completely and in the simplest manner the motions which occur in nature." Inasmuch as a large school of natural philosophers consider that it is the object of all exact sciences to give a mechanical explanation of natural phenomena, it would follow that the object of all science is to reduce the phenomena of nature to forms of motion, and to describe these completely and in the simplest manner. We may feel some reluctance in assenting at once to this definition. Still an analysis of