more correctly when he says: "To investigate the essence of a natural phenomenon, three conditions are necessary: We must first study and know the phenomenon itself, from all sides; we must then determine in what relation it stands to other natural phenomena; and lastly, when we have ascertained all these relations, we have to solve the problem of measuring these relations and the laws of mutual dependence—that is, of expressing them in numbers. In the first period of chemistry, all the powers of men's minds were devoted to acquiring a knowledge of the properties of bodies; it was necessary to discover, observe, and ascertain their peculiarities. This is the alchemistical period. The second period embraces the determination of the mutual relations or connections of these properties; this is the period of phlogistic chemistry. In the third period, in which we now are, we ascertain by weight and measure and express in numbers the degree in which the properties of bodies are mutually dependent. The inductive sciences begin with the substance itself, then come just ideas, and lastly, mathematics are called in, and, with the aid of numbers, complete the work." [1]

As Galileo, Huygens, and Newton, by a series of brilliant investigations and theories, such as those of the pendulum, the fall of bodies, finally of universal gravitation, established the usefulness of the mathematical treatment of physical phenomena, so Lavoisier and his school proved the correctness and usefulness of their views by the new theory of combustion, as consisting in the combination of a special body or element called oxygen with other bodies

5. Theory of combustion

[1] 'Familiar Letters on Chemistry,' translated by Blyth, 4th ed., London, 1859, p. 60.