

It has been observed by a distinguished modern scholar,²⁹ that the place which Pythagoras ascribed to his numbers is intelligible only by supposing that he confounded, first a numerical unit with a geometrical point, and then this with a material atom. But this criticism appears to place systems of physical philosophy under requisitions too severe. If all the essential properties and attributes of things were fully represented by the relations of number, the philosophy which supplied such an explanation of the universe, might well be excused from explaining also that existence of objects which is distinct from the existence of all their qualities and properties. The Pythagorean love of numerical speculations might have been combined with the doctrine of atoms, and the combination might have led to results well worth notice. But so far as we are aware, no such combination was attempted in the ancient schools of philosophy; and perhaps we of the present day are only just beginning to perceive, through the disclosures of chemistry and crystallography, the importance of such a line of inquiry.

4. *Technical Forms of the Atomists and Others.*—The atomic doctrine, of which we have just spoken, was one of the most definite of the physical doctrines of the ancients, and was applied with most perseverance and knowledge to the explanation of phenomena. Though, therefore, it led to no success of any consequence in ancient times, it served to transmit, through a long series of ages, a habit of really physical inquiry; and, on this account, has been thought worthy of an historical disquisition by Bacon.³⁰

The technical term, *Atom*, marks sufficiently the nature of the opinion. According to this theory, the world consists of a collection of simple particles, of one kind of matter, and of indivisible smallness (as the name indicates), and by the various configurations and motions of these particles, all kinds of matter and all material phenomena are produced.

To this, the Atomic Doctrine of Leucippus and Democritus, was opposed the *Homoiomeria* of Anaxagoras; that is, the opinion that material things consist of particles which are homogeneous in each kind of body, but various in different kinds: thus for example, since by food the flesh and blood and bones of man increase, the author of this doctrine held that there are in food particles of flesh, and blood.

²⁹ Thirlwall's *Hist. Gr.* ii. 142.

³⁰ *Parmenidis et Telesii et præcipue Democriti Philosophia, &c., Works, vol. ix. 317.*