

works are lost and are only known by the references made to them in the writings of Plutarch and others. Through all of these, there runs the idea of the helplessness of the human infant, which required an embryonic connection between the first human individuals and some pre-existing animals, thus teaching the doctrine of Evolution 2,500 years before Leamark. His doctrine is best expressed by giving one or two quotations. "Men were in the beginning engendered in fish, and after they had been nourished and had become able to shift for themselves, they were sent forth and took to land"; again, "Either fish or animals like fish spring from heated waters and earth, and the human infant grew from those to a state, so that when they burst, men and women capable of nourishing themselves proceeded from them;" In another place—"Man must have been born of animals of a different form, for whereas other animals get their food by themselves, man alone requires long raising, and no one living, such as he was originally, could have been preserved."

PYTHAGORAS (born 880? B. C.) travelled for some time in the East, and after having resided for many years in Egypt, returned to his native country. His theories were more philosophical than any other known cosmogony, although he derived them in part from the Egyptians and Orientals. From his general propositions, as given by Ovid, it may be stated that "Nothing perishes in this world; but things merely vary and change their form. To be born means simply that a thing begins to be something different from what it was before, and dying, means ceasing to be the same thing. Yet, although nothing retains long the same image, the sum of the whole remains constant." This idea of physical transmigration of matter he carried to his moral philosophy, and taught a spiritual pantheism allied to the transmigration of souls with the remembrance of former existence. Although he theorized on many phenomena of physical geology, he had no idea of the progress of life, as indeed neither had the other Greek or Roman philosophers. Pythagoras founded the Italic School. As a mathematician he was celebrated. He

was also aware both of the annual and diurnal motion of the earth, of its spherical form, and he thought that comets were planet-like stars moving round the sun. He appears to have had some ideas of the theory of refraction of light and heat, and also that of colour. He also left a work on horticulture.

EMPEDOCLES, one of the most celebrated disciples of Pythagoras left a work on medicinal plants, in which he draws the analogy between the eggs of animals and the seeds of plants.

XENOPHANES, (B.C. 535) a Colophmion, founded the Eleatic School of Speculative Philosophy. This scientist appears among the first who recognized the *débris* of fossil fishes and shells on the highest hills, from which he concluded that the waters had covered the mountains. Parmenides of this school may be considered as the first whose speculations led him to believe (professedly) in the non-existence of matter, and that the manifestations of it emanated from intelligence, but were only the result of illusions.

Another pupil of this last school, LEUCEPPIUS who revived the Chinese atomic theory, together with Democritus (born B.C. 406) founded the Atomic School. This latter philosopher in his astronomical researches was in advance of his day; he recognized the production of lunar spots by the shadows of mountains; and taught that the milky way was a mass of stars. Democritus made some important discoveries in anatomy, and the study of plants also occupied his attention. This philosopher died at the advanced age of 199 years.

These four schools (Ionic, Italic, Eleatic and Atomic) were the foundations of scientific study in Greece, but the philosophy was reduced to two opposite principles, The Atomic explained all phenomena by natural laws, while the Eleatic was purely idealistic.

SOCRATES, who had been brought up in the Atomic schools, incited by the spirit of true scientific enquiry, attacked the speculative Eleatics and has since been regarded as the father of experimental philosophy. Out of these schools grew the Asclepiadae (the reputed descendants of Æsculapius), students of the medical art, who were more practical than