

speculative, adopting facts rather than theories. The most celebrated of these was Hippocrates, who introduced into Greece and advanced the knowledge of medicine, which he had acquired in the East and in Egypt. In his works he has left the description of about one hundred and fifty plants used in medicine.

ARISTOTLE (born B.C. 384) the greatest of the Greek naturalists adopted the experimental ideas of Socrates. Observations were alone the bases on which he built up his inductions. Making use of what he had noticed and what scattered facts he had learned from others, he made the earliest attempt at a classification of Natural History on true scientific principles. He divided animals into two classes those with red blood, and those without it, alluding to vertebrate and invertebrate. The Articulates he divided into winged and wingless; the former being divided according as they had two or four wings. He also recognized the distinction between grinders and suckers. He gives sometimes a good description of the brain, and his knowledge of the nerves far surpassed that of any of his predecessors. He also studied the passages of the veins and arteries, and was the first to accompany his descriptions with figures. His classification of birds has been adopted by modern ornithologists and he recognized the analogy of the wings to the fore limbs of quadrupeds. His knowledge of Ichthyology was wide and generally correct. His treatise on Comparative Anatomy, excepting that of Galen, was the only one till the sixteenth century of our era. He discovered the eye of the mole which for a long time was erroneously supposed to be deprived of vision, as well as the auditory faculty of fishes and insects. He wrote on hibernation and reproduction of animals, sleep of fishes, metamorphosis of insects, and evolution of birds from the eggs. He thought that all insects were reproduced by spontaneous fission, except spiders, crickets and grasshoppers. He is said to have written two works on Botany but these have perished. In his treatise on Meteorology are found descriptions of more of the metals, which he considered of aqueous origin because they would liquify by fusion. Aristotle's cosmogony was

Neptunian, having observed the rapid accumulation of estuarine deposits, and shells in the material cast up by the sea, he attributed to water the formation of the globe. He considers the agents of change in the earth's crust capable of effecting a complete revolution, but the changes being so slow compared with our lives, are overlooked, and he argued that as continents and rivers had sprung up so the existing must disappear. This doctrine of the successive revolutions of the earth was taught by the Serbanites, a sect of Arabian Astronomers, who flourished some centuries before our era. According to them the circulation of the heavenly Orb is completed over in every 36420 years, and when each circulation is finished, one pair of each species of animals and plants is created and the former pair disappears. When we consider the age in which Aristotle lived, we must admire his transcendent genius; his wondrous attainments excite surprise, having laboured under all the difficulties of darkness, and even without the invaluable aid of the microscope. Still he owed much to Alexander, who had been his pupil. When this potentate was engaged in his foreign wars, he sent Aristotle every uncommon specimen with which he met, he himself being a lover of nature.

THEOPHRASTUS (B. C. 320) was a disciple of Aristotle who bequeathed to him his library. Theophrastus was no unworthy heir, and did for Botany and Mineralogy nearly as much as his great master had done for Natural History. Of necessity his ideas of structure were erroneous for want of magnifying instruments. He divided plants according to size into trees, shrubs, undershrubs, and herbs, which classification was adopted till the revival of learning. He treated of the inflorescence of plants and their mode of reproduction, and although only with a vague idea of their sexual character, he divided them into male and female, but he sometimes made those in which the pistil is wanting to be the fruit-bearing individuals; yet he perceived many of their true characters and observed the productiveness of vegetables, length of life, sensibility of diseases peculiar to them, and also the insects which feed on them. He also filled-in gaps left by Aristotle in his