

estimate by the measurement of magnitudes and the duration of motion. The earliest epoch of such a species of natural observation, although principally limited to organic substances, was the age of Aristotle. There remains a third and higher stage in the progressive advancement of the knowledge of physical phenomena, which embraces an investigation into natural forces, and the powers by which these forces are enabled to act, in order to be able to bring the substances liberated into new combinations. The means by which this liberation is effected are experiments, by which phenomena may be called forth at will.

The last-named stage of the process of knowledge, which was almost wholly disregarded in antiquity, was raised by the Arabs to a high degree of development. This people belonged to a country which enjoyed, throughout its whole extent, the climate of the region of palms, and in its greater part that of tropical lands (the tropic of Cancer intersecting the peninsula in the direction of a line running from Maskat to Mecca), and this portion of the world was therefore characterized by the highly-developed vital force pervading vegetation, by which an abundance of aromatic and balsamic juices was yielded to man from various beneficial and deleterious vegetable substances. The attention of the people must early have been directed to the natural products of their native soil, and those brought as articles of commerce from the accessible coasts of Malabar, Ceylon, and Eastern Africa. In these regions of the torrid zone, organic forms become individualized within very limited portions of space, each one being characterized by individual products, and thus increasing the communion of men with nature by a constant excitement toward natural observation. Hence arose the wish to distinguish carefully from one another these precious articles of commerce, which were so important to medicine, to manufactures, and to the pomp of temples and palaces, and to discover the native region of each, which was often artfully concealed from motives of avarice. Starting from the staple emporium of Gerrha, on the Persian Gulf, and from Yemen, the native district of incense, numerous caravan tracks intersected the whole interior of the Arabian peninsula to Phœnicia and Syria, and thus every where diffused a taste for and a knowledge of the names of these powerful natural products.

The science of medicine, which was founded by Dioscorides in the school of Alexandria, when considered with reference to its scientific development, is essentially a creation of the Arabs,