

for the foundations of cosmical knowledge, and of comparative ethnological study, were presented at once to one single portion of the human race. The use of these materials, and the intellectual elaboration of matter, are facilitated and rendered of more importance by the direction imparted by the Stagirite to empirical investigation, philosophical speculation, and to the strict definitions of a language of science. The Macedonian expedition was, in the strictest sense of the word, a scientific expedition. Callisthenes of Olynthus, the pupil of Aristotle, and friend of Theophrastus. The knowledge of the heavens, and of the earth and its products, was considerably increased by intercourse with Babylon, and by the observations that had been made by the dissolved Chaldean order of priests—p. 169.

III. *Increase of the Contemplation of the Universe under the Ptolemies.*—Grecian Egypt enjoyed the advantage of political unity, while its geographical position, and the entrance to the Arabian Gulf, brought the profitable traffic of the Indian Ocean within a few miles of the southeastern shores of the Mediterranean. The kingdom of the Seleucidæ did not enjoy the advantages of a maritime trade, and was frequently shaken by the conflicting nationality of the different satrapies. Active traffic on rivers and caravan tracks with the elevated plateaux of the Seres, north of the Uttara-Kuru and the Valley of the Oxus. Knowledge of monsoons. Reopening of the canal connecting the Red Sea with the Nile above Bubastus. History of this water route. Scientific institutions under the protection of the Lagides; the Alexandrian Museum, and two collections of books in Bruchium and at Rhakotis. Peculiar direction of these studies. A happy generalization of views manifests itself, associated with an industrious accumulation of materials. Eratosthenes of Cyrene. The first attempt of the Greeks, based on imperfect data of the Bematists, to measure a degree between Syene and Alexandria. Simultaneous advance of science in pure mathematics, mechanics, and astronomy. Aristyllus and Timochares. Views entertained regarding the structure of the universe by Aristarchus of Samos, and Seleucus of Babylon or of Erythræa. Hipparchus, the founder of scientific astronomy, and the greatest independent astronomical observer of antiquity. Euclid. Apollonius of Perga, and Archimedes—p. 179.

IV. *Influence of the Universal Dominion of the Romans and of their Empire on the Extension of Cosmical Views.*—Considering the diversity in the configuration of the soil, the variety of the organic products, the distant expeditions to the Amber lands, and under Ælius Gallus to Arabia, and the peace which the Romans long enjoyed under the monarchy of the Cæsars, they might, indeed, during four centuries, have afforded more animated support to the pursuit of natural science; but with the Roman national spirit perished social mobility, publicity, and the maintenance of individuality—the main supports of free institutions for the furtherance of intellectual development. In this long period, the only observers of nature that present themselves to our notice are Dioscorides, the Cilician, and Galen of Pergamus. Claudius Ptolemy made the first advance in an important branch of mathematical physics, and in the study of optics, based on experiments. Material advantages of the extension of inland trade to the interior of Asia, and the navigation of Myos Hormos to India. Under Vespasian and Domitian, in the time of the dynasty of Han, a Chinese army penetrates as far as the eastern shores of the Caspian Sea. The direction of the stream of migration in Asia is from east to west, while in the new continent it inclines from north to south. Asiatic migrations begin, a century and a half before