

gions of space, and the delicate tissues of animal and vegetable structures, which serve as the very substratum of life. Thus the whole of the seventeenth century, whose commencement was brilliantly signalized by the great discovery of the telescope, together with the immediate results by which it was attended—from Galileo's observation of Jupiter's satellites, of the crescentic form of the disk of Venus, and the spots on the sun, to the theory of gravitation discovered by Newton—ranks as the most important epoch of a newly-created physical astronomy. This period constitutes, therefore, from the unity of the efforts made toward the observation of the heavenly bodies, and in mathematical investigations, a sharply-defined section in the great process of intellectual development, which, since then, has been characterized by an uninterrupted progress.

In more recent times, the difficulty of signalizing separate momenta increases in proportion as human activity becomes more variously directed, and as the new order of social and political relations binds all the various branches of science in one closer bond of union. In some few sciences, whose development has been considered in the history of the physical contemplation of the universe, as, for instance, in chemistry and descriptive botany, individual periods may be instanced, even in the most recent time, in which great advancement has been rapidly made, or new views suddenly opened; but, in the history of the contemplation of the universe, which, from its very nature, must be limited to the consideration of those facts regarding separate branches of science which most directly relate to the extension of the idea of the Cosmos considered as one natural whole, the connection of definite epochs becomes impracticable, since that which we have named the process of intellectual development presupposes an uninterrupted simultaneous advance in all spheres of cosmical knowledge. At this important point of separation between the downfall of the universal dominion of the Romans and the introduction of a new and foreign element of civilization by means of the first direct contact of our continent with the land of the tropics, it appears desirable that we should throw a general glance over the path on which we are about to enter.

The Arabs, a people of Semitic origin, partially dispelled the barbarism which had shrouded Europe for upward of two hundred years after the storms by which it had been shaken, from the aggressions of hostile nations. The Arabs lead us back to the imperishable sources of Greek philosophy; and,