tem the center of gravity is often comprised within the innermost limits of a *visible* central body. If, therefore, we regard the Sun and the Earth, or the Earth and the Moon, as double stars, and the whole of our planetary solar system as a multiple cluster of stars, the analogy thus suggested must be limited to the universality of the laws of attraction in different systems, being alike applicable to the independent processes of light and to the method of illumination.

For the generalization of cosmical views, corresponding with the plan we have proposed to follow in giving a delineation of nature or of the universe, the solar system to which the Earth belongs may be considered in a two-fold relation: first, with respect to the different classes of individually agglomerated matter, and the relative size, conformation, density, and distance of the heavenly bodies of this system; and, secondly, with reference to other portions of our starry cluster, and of the changes of position of its central body, the Sun.

The solar system, that is to say, the variously-formed matter circling round the Sun, consists, according to the present state of our knowledge, of *eleven primary planets*,* eighteen satel-

* [Since the publication of Baron Humboldt's work in 1845, several other planets have been discovered, making the number of those belonging to our planetary system *sixteen* instead of *eleven*. Of these, Astrea, Hebe, Flora, and Iris are members of the remarkable group of asteroids between Mars and Jupiter. Astrea and Hebe were discovered by Hencke at Driesen, the one in 1846 and the other in 1847; Flora and Iris were both discovered in 1847 by Mr. Hind, at the South Villa Observatory, Regent's Park. It would appear from the latest determinations of their elements, that the small planets have the following order with respect to mean distance from the Sun: Flora, Iris, Vesta, Hebe, Astrea, Juno, Ceres, Pallas. Of these, Flora has the shortest period (about 3¼ years). The planet Neptune, which, after having been predicted by several astronomers, was actually observed on the 25th of September, 1846, is situated on the confines of our planetary system beyond Uranus. The discovery of this planet is not only highly interesting from the importance attached to it as a question of science, but also from the evidence it affords of the care and unremitting labor evinced by modern astronomers in the investigation and comparison of the older calculations, and the ingenious application of the results thus obtained to the observation of new facts. The merit of having paved the way for the discovery of the planet Neptune is due to M. Bouvard, who, in his persevering and assiduous efforts to deduce the entire orbit of Uranus from observations made during the forty years that succeeded the discovery of that planet in 1781, found the results yielded by theory to be at variance with fact, in a degree that had no parallel in the history of astronomy. This startling discrepancy, which seemed only to gain additional weight from every attempt made by M. Bouvard to correct his calculations, led Leverrier, after a careful modification of the tables of Bouvard, to establish the proposition that there was "a