

imitations of eternal ideas in the sense of Plato, and which confounds these abstractions of the mind with the objective nature of real things.”¹ Nevertheless, we must recognise that through the vague and poetical expositions of Goethe’s writings there is to be seen the fruitful idea of the change, the instability, of forms, as an equally important side of reality.² In fact, Goethe oscillates in his half-formed theories between the ideal archetypes of Plato and the more recent conceptions of Darwin and Spencer, as is proved by the vivid, even passionate, interest which he took in the celebrated controversy of Cuvier and Saint-Hilaire in the French Academy of Sciences in the year 1830,—an incident which carries us into the midst of the ideas with which the following chapter will be occupied.

Before we take up those entirely different lines of observation and reasoning, we must note a great expansion and development of the study of the form of natural objects—of morphology—in two independent directions. One of these carried the study of forms into the larger dimensions of time and space, the past

¹ Sachs, ‘Geschichte der Botanik,’ p. 181.

² Of Goethe Huxley says (‘Life of Owen,’ vol. ii. p. 290): “On the face of the matter it is not obvious that the brilliant poet had less chance of doing good service in natural science than the dullest of dissectors and nomenclators. Indeed there was considerable reason, a hundred years ago, for thinking that an infusion of the artistic way of looking at things might tend to revivify the somewhat mummified body of technical zoology and botany. Great ideas were floating about; the artistic

apprehension was needed to give these airy nothings a local habitation and a name; to convert vague suppositions into definite hypotheses. And I apprehend that it was just this service which Goethe rendered by writing his essays on the intermaxillary bone, on osteology generally, and on the metamorphosis of plants.” A very full appreciation of Goethe’s merit will be found in all the principal writings of Ernst Haeckel, notably in the fourth chapter of the first volume of the ‘*Natürliche Schöpfungsgeschichte*,’ 9th ed., Berlin, 1898.