

the types and epochs of the other and dominant school ; but they were difficult to grasp, being not unfrequently fantastic compromises between the legends of religious tradition and the beginnings of scientific thought. For a long time they evaded the endeavour to put them into

encourage purely morphological and to discourage genetic considerations. Accordingly the many beginnings of a scientific account of the origin and historical development of the things around us, of which Lyell gave the first fairly accurate summary in the first volume of his 'Principles of Geology' (1st ed., 1830), were hardly noticed in the 'Kosmos' (vol. i., 1845, vol. ii., 1847). None of the celebrated cosmogonical hypotheses, which we shall deal with in this chapter,—neither the 'Protogæa' of Leibniz nor the 'Époques de la Nature' of Buffon, neither Kant's nor Laplace's nebular theory, nor even the brilliant introduction to the 'Ossements fossiles' of Cuvier, though the latter, and still more Laplace, must have had a great personal influence on him,—receive any adequate attention in the pages of 'Kosmos.' They are rarely referred to, and then only as works of imaginative value, for which the true scientific groundwork, extensive observation, and especially the experiences and results of travel, are wanting. Humboldt, whose mind was stored with these riches in an abundance and variety unequalled before or since, limited himself to a portraiture, to a panoramic and morphological, to a structural and architectonic view of things, with which he combined a deep sense of the reaction which the contemplation of nature must have on the artistic faculty. (See the Introduction to the second, the most brilliant, volume of 'Kosmos.')

Genetic theories were to his mind premature and foreign to his purpose. "The mysterious and unsolved problems of development do not belong to the empirical region of objective observation, to the description of the developed, the actual state of our planet. The description of the universe, soberly confined to reality, remains averse to the obscure beginnings of a history of organic life, not from modesty, but from the nature of its objects and its limits" ('Kosmos,' vol. i. p. 367). "The world of forms, I repeat, can in the enumeration of space relations only be pictured as something actual, as something existing in nature ; not as a subject of an intellectual process of reasoning on already known causal connections. . . . They are facts of nature, resulting from the conflict of many, to us, unknown conditions of active push-and-pull forces. With unsatisfied curiosity we approach here the dark region of development. We have here to do, in the proper sense of the frequently misused word, with world-events, with cosmical processes of immeasurable periods. . . . The present form of things and the precise numerical determination of relations has not hitherto succeeded in leading us to a knowledge of states traversed, to a clear insight into the conditions under which they originated. These conditions are not therefore to be termed accidental, as man calls everything that he cannot explain genetically" (vol. iii. p. 431).