

themselves in tones, numbers, and lines.* The improvement of an intellectual instrument of research—analysis—has powerfully accelerated the reciprocal fructification of ideas, which is no less important than the rich abundance of their creations. It has opened to the physical contemplation of the universe new spheres of immeasurable extent in the terrestrial and celestial regions of space, revealed both in the periodic fluctuations of the ocean and in the varying perturbations of the planets.

RETROSPECT OF THE EPOCHS THAT HAVE BEEN SUCCESSIVELY CONSIDERED.—INFLUENCE OF EXTERNAL OCCURRENCES ON THE DEVELOPMENT OF THE RECOGNITION OF THE UNIVERSE AS ONE WHOLE.—MULTIPLICITY AND INTIMATE CONNECTION OF THE SCIENTIFIC EFFORTS OF RECENT TIMES.—THE HISTORY OF THE PHYSICAL SCIENCES BECOMES GRADUALLY ASSOCIATED WITH THE HISTORY OF THE COSMOS.

I APPROACH the termination of my bold and difficult undertaking. Upward of two thousand years have been passed in review before us, from the early stages of civilization among the nations who dwelt around the basin of the Mediterranean and the fruitful river valleys of Western Asia, to the beginning of the last century, to a period, therefore, at which general views and feelings were already beginning to blend with those of our own age. I have endeavored, in seven sharply-defined sections, forming, as it were, a series of as many separate pictures, to present a history of the physical contemplation of the universe, or, in other words, the history of the gradual development of the knowledge of the universe as a whole. To what extent success may have attended the attempt to apprehend the mass of accumulated matter, to seize on the character of the principal epochs, and to indicate the paths on which ideas and civilization have been advanced, can not be determined by him who, with a just mistrust of his remaining powers, is alone conscious that the image of so great an undertaking has been present to his mind in clear though general outlines.

At the commencement of our consideration of the period of the Arabs, and in beginning to describe the powerful influence exercised by the admixture of a foreign element in European civilization, I indicated the limits beyond which the history of the Cosmos coincides with that of the physical

* Wilhelm von Humboldt, *Gesammelte Werke*, bd. i., s. 11.