

solar light be radiated from a solid mass or from a gaseous envelope. The enumeration of the experiments which, since Huygens's time, have gradually led to Arago's discovery of colored polarization, must be reserved for the history of optics. The consideration of the development of the principles, in accordance with which variously-formed plants admit of being classified in families, falls, in like manner, within the domain of the history of phytognosy, or botany; while the geography of plants, or a study of the local and climatic distribution of vegetation over the whole earth—alike over the solid portions and in the basins of the sea—constitutes an important section in the history of the physical contemplation of the universe.

The intellectual consideration of that which has led man to an insight into the unity of nature is, as we have already observed, as little entitled to the appellation of the complete history of the cultivation of mankind as to that of a history of the natural sciences. An insight into the connection of the vital forces of the universe must certainly be regarded as the noblest fruit of human civilization, and as the tendency to arrive at the highest point to which the most perfect development of the intellect can attain; but the subject at present under consideration must still constitute only a part of the history of human civilization, embracing all that has been attained by the advance of different nations in the pursuit of every branch of mental and moral culture. By assuming a more limited physical point of view, we necessarily become restricted to one section of the history of human knowledge, and our attention is specially directed to the relation existing between the knowledge that has been gradually acquired and the whole extent of the domain of nature; and we dwell less on the extension of separate branches of science than on the results capable of generalization, and the material aids contributed by different ages toward a more accurate observation of nature.

We must, above all, distinguish carefully between an early presentiment of knowledge and knowledge itself. With the increasing cultivation of the human race, much has passed from the former to the latter, and by this transition the history of discovery has been rendered indistinct. An intellectual and ideal combination of the facts already established often guides almost imperceptibly the course of presage, elevating it as by a power of inspiration. How much has been enounced among the Indians and Greeks, and during the Middle Ages, regarding the connection of natural phenomena, which, at first,