

have lost sight of land for several days, know not where they are. They would not be able to find the countries again which I have discovered. To navigate a ship requires the compass (*compas y arte*), and the knowledge or art of the astronomer."

I have given these characteristic details in order more clearly to show the manner in which nautical astronomy—the powerful instrument for rendering navigation more secure, and thereby of facilitating access to all portions of the earth—was first developed in the period of time under consideration, and how, in the general intellectual activity of the age, men perceived the possibility of establishing methods which could not be made practically applicable until improvements were effected in solar and lunar tables, and in the construction of time-pieces and instruments for measuring angles. If the character of an age be "the manifestation of the human mind in any definite epoch," the age of Columbus and of the great nautical discoveries must be regarded as having given a new and higher impetus to the acquirements of succeeding centuries, while it increased in an unexpected manner the objects of science and contemplation. It is the peculiar attribute of important discoveries at once to extend the domain of our possessions, and the prospect into the new territories which yet remain open to conquest. Weak minds complacently believe that in their own age humanity has reached the culminating point of intellectual progress, forgetting that by the internal connection existing among all natural phenomena, in proportion as we advance, the field to be traversed acquires additional extension, and that it is bounded by a horizon which incessantly recedes before the eyes of the inquirer.

Where, in the history of nations, can we find an epoch similar to that in which events so fraught with important results as the discovery and first colonization of America, the passage to the East Indies round the Cape of Good Hope, and Magellan's first circumnavigation, occurred simultaneously with the highest perfection of art, with the attainment of intellectual

posals for accomplishing the same object by the conveyance of time; but his chronometers were sand-and-water clocks, wheel-works moved by weights, and even by wicks "dipped in oil," which were consumed in very equal intervals of time! Pigafetta (*Transunto del Trattato di Navigazione*, p. 219) recommends altitudes of the moon at the meridian. Amerigo Vespucci, speaking of the method of determining longitude by lunar distances, says, with great naïveté and truth, that its advantages arise from the "*corso più leggier de la luna.*" (Canovai, *Viaggi*, p. 57.)