

the Middle Ages were to be regarded less as the result of actual observation than as mere compilations, reflecting the opinions of classical antiquity. Two of the greatest men of the sixteenth century, Conrad Gesner and Andreas Cæsalpinus, have the high merit of having opened a new path to zoology and botany.

In order to give a more vivid idea of the early influence exercised by oceanic discoveries on the enlarged sphere of the physical and astronomical sciences connected with navigation, I will call attention, at the close of this description, to some luminous points, which we may already see glimmering through the writings of Columbus. Their first faint light deserves to be traced with so much the more care, because they contain the germs of general cosmical views. I will not pause here to consider the proofs of the results which I have enumerated, since I have given them in detail in another work, entitled *Examen Critique de l'Histoire de la Géographie du Nouveau Continent et des Progrès de l'Astronomie Nautique aux xv<sup>e</sup> et xvi<sup>e</sup> Siècles*. But, in order to avoid the imputation of undervaluing the views of modern physical knowledge, in comparison with the observations of Columbus, I will give the literal translation of a few lines contained in a letter which the admiral wrote from Haiti in the month of October, 1498. He writes as follows: "Each time that I sail from Spain to India, as soon as I have proceeded about a hundred nautical miles to the west of the Azores, I perceive an extraordinary alteration in the movement of the heavenly bodies, in the temperature of the air, and in the character of the sea. I have observed these alterations with especial care, and I notice that the mariner's compass (*agujas de marear*), whose declination had hitherto been northeast, was now changed to northwest; and when I had crossed this line (*raya*), as if in passing the brow of a hill (*como quien traspone una cuesta*), I found the ocean covered by such a mass of sea weed, similar to small branches of pine covered with pistachio nuts, that we were apprehensive that, for want of a sufficiency of water, our ships would run upon a shoal. Before we reached the line of which I speak, there was no trace of any such sea weed. On the boundary line, one hundred miles west of the Azores, the ocean becomes at once still and calm, being scarcely ever moved by a breeze. On my passage from the Canary Islands to the parallel of Sierra Leone, we had to endure a frightful degree of heat, but, as soon as we had crossed the above-mentioned line (to the west of the meridian of the Azores), the climate