

if, indeed, the Earth's equator were perpendicular to the Earth's orbit, at each part of its surface, even under the poles, the Sun would be in the zenith once in the year, and for a greater or less time, neither rise nor set. The differences of summer and winter under each latitude (as well as the length of the day) would obtain the maximum of opposition. The climates in each part of the Earth would belong, in the highest degree, to those which are called extreme, and which an interminably complicated series of rapidly-changing currents of air could only slightly equalize. If the reverse were the case, or the obliquity of the ecliptic null, if the Earth's equator coincided with the ecliptic, the differences of the seasons and in the length of the days would cease every where, because the Sun would continually appear to move in the equator. The inhabitants of the poles would see it perpetually at the horizon. "The mean annual temperature of each point of the Earth's surface would also be that of each individual day."* This condition has been called an eternal spring, although, however, only on account of the universally equal length of the days and nights. As the growth of plants would be deprived of the stimulating action of the Sun's heat, a great part of those districts which we now call temperate zones would be reduced to the almost always uniform and not very agreeable spring climate, from which I suffered much under the equator, upon the barren mountain plains (Paramost) between 10,659 and 12,837 feet above the level of the sea, situated near the boundary of perpetual snow in the Andes chain. The temperature of the air during the day oscillates there between $4\frac{1}{2}^{\circ}$ and 9° Réaum. (42° and $52^{\circ}.25$ Fahr.).

Grecian antiquity was much occupied with the obliquity of the ecliptic, with rough measurements, conjectures as to its variability, and the influence of the inclination of the Earth's axis upon climate, and the luxuriance of organic development. These speculations belonged especially to Anaxagoras, the Pythagorean school, and to Oenopides of Chios. The passages which give us any information on this point are scanty and indecisive; however, they show that the development of organic life and the origin of animals were considered to have been simultaneous with the epoch in which the axis of the Earth first commenced to be inclined, which also altered the

* Mädler, *Astronomie*, § 193.

† Humboldt, *De Distributione Geographica Plantarum*, p. 104. (*Views of Nature*, p. 220 to 223, Bohn's edition.)