

valleys, or according to the effects of the hypsometrical relations on their own summits, which often spread into elevated plateaux. The division of mountains into chains separates the earth's surface into different basins, which are often narrow and walled in, forming caldron-like valleys, and (as in Greece and in part of Asia Minor) constitute an individual local climate with respect to heat, moisture, transparency of atmosphere, and frequency of winds and storms. These circumstances have at all times exercised a powerful influence on the character and cultivation of natural products, and on the manners and institutions of neighboring nations, and even on the feelings with which they regard one another. This character of *geographical individuality* attains its maximum, if we may be allowed so to speak, in countries where the differences in the configuration of the soil are the greatest possible, either in a vertical or horizontal direction, both in relief and in the articulation of the continent. The greatest contrast to these varieties in the relations of the surface of the earth are manifested in the Steppes of Northern Asia, the grassy plains (savannahs, llanos, and pampas) of the New Continent, the heaths (*Ericeta*) of Europe, and the sandy and stony deserts of Africa.

The law of the decrease of heat with the increase of elevation at different latitudes is one of the most important subjects involved in the study of meteorological processes, of the geography of plants, of the theory of terrestrial refraction, and of the various hypotheses that relate to the determination of the height of the atmosphere. In the many mountain journeys which I have undertaken, both within and without the tropics, the investigation of this law has always formed a special object of my researches.*

Since we have acquired a more accurate knowledge of the true relations of the distribution of heat on the surface of the earth, that is to say, of the inflections of isothermal and isothermal lines, and their unequal distance apart in the different eastern and western systems of temperature in Asia, Central Europe, and North America, we can no longer ask the general question, what fraction of the mean annual or summer temperature corresponds to the difference of one degree of geographical latitude, taken in the same meridian? In each system of *isothermal* lines of equal curvature there reigns a

* Humboldt, *Recueil d'Observations Astronomiques*, t. i., p. 126-140; *Rélation Historique*, t. i., p. 119, 141, 227; Biot, in *Connaissance des Temps pour l'an 1841*, p. 90-109.