

also with reference to its influence on the feelings and mental condition of men.

If the surface of the Earth consisted of one and the same homogeneous fluid mass, or of strata of rock having the same color, density, smoothness, and power of absorbing heat from the solar rays, and of radiating it in a similar manner through the atmosphere, the isothermal, isotheral, and isochimenal lines would all be parallel to the equator. In this hypothetical condition of the Earth's surface, the power of absorbing and emitting light and heat would every where be the same under the same latitudes. The mathematical consideration of climate, which does not exclude the supposition of the existence of currents of heat in the interior, or in the external crust of the earth, nor of the propagation of heat by atmospheric currents, proceeds from this mean, and, as it were, primitive condition. Whatever alters the capacity for absorption and radiation, at places lying under the same parallel of latitude, gives rise to inflections in the isothermal lines. The nature of these inflections, the angles at which the isothermal, isotheral, or isochimenal lines intersect the parallels of latitude, their convexity or concavity with respect to the pole of the same hemisphere, are dependent on causes which more or less modify the temperature under different degrees of longitude.

The progress of *Climatology* has been remarkably favored by the extension of European civilization to two opposite coasts, by its transmission from our western shores to a continent which is bounded on the east by the Atlantic Ocean. When, after the ephemeral colonization from Iceland and Greenland, the British laid the foundation of the first permanent settlements on the shores of the United States of America, the emigrants (whose numbers were rapidly increased in consequence either of religious persecution, fanaticism, or love of freedom, and who soon spread over the vast extent of territory lying between the Carolinas, Virginia, and the St. Lawrence) were astonished to find themselves exposed to an intensity of winter cold far exceeding that which prevailed in Italy, France, and Scotland, situated in corresponding parallels of latitude. But, however much a consideration of these climatic relations may have awakened attention, it was not attended by any practical results until it could be based on the numerical data of *mean annual temperature*. If, between 58° and 30° north latitude, we compare Nain, on the coast of Labrador, with Gottenburg; Halifax with Bordeaux; New