close and necessary connection between three elements, namely, the decrease of heat in a vertical direction from below upward, the difference of temperature for every one degree of geographical latitude, and the uniformity in the mean temperature of a mountain station, and the latitude of a point situated at the level of the sea.

In the system of Eastern America, the mean annual temperature from the coast of Labrador to Boston changes $1°·6$ for every degree of latitude; from Boston to Charleston about $1°·7$; from Charleston to the tropic of Cancer, in Cuba, the variation is less rapid, being only $1°·2$. In the tropics this diminution is so much greater, that from the Havana to Cumana the variation is less than $0°·4$ for every degree of latitude.

The case is quite different in the isothermal system of Central Europe. Between the parallels of $38°$ and $71°$ I found that the decrease of temperature was very regularly $0°·9$ for every degree of latitude. But as, on the other hand, in Central Europe the decrease of heat is $1°·8$ for about every 534 feet of vertical elevation, it follows that a difference of elevation of about 267 feet corresponds to the difference of one degree of latitude. The same mean annual temperature as that occurring at the Convent of St. Bernard, at an elevation of 8173 feet, in lat. $45°$ $50'$, should therefore be met with at the level of the sea in lat. $75°$ $50'$.

In that part of the Cordilleras which falls within the tropics, the observations I made at various heights, at an elevation of upward of 19,000 feet, gave a decrease of $1°$ for every 341 feet; and my friend Boussingault found, thirty years afterward, as a mean result, 319 feet. By a comparison of places in the Cordilleras, lying at an equal elevation above the level of the sea, either on the declivities of the mountains or even on extensive elevated plateaux, I observed that in the latter there was an increase in the annual temperature varying from $2°·7$ to $4°·1$. This difference would be still greater if it were not for the cooling effect of nocturnal radiation. As the different climates are arranged in successive strata, the one above the other, from the cacao woods of the valleys to the region of perpetual snow, and as the temperature in the tropics varies but little throughout the year, we may form to ourselves a tolerably correct representation of the climatic relations to which the inhabitants of the large cities in the Andes are subjected, by comparing these climates with the temperatures of particular months in the plains of France and Italy. While