

York with Naples ; St. Augustine, in Florida, with Cairo, we find that, under the same degrees of latitude, the differences of the mean annual temperature between Eastern America and Western Europe, proceeding from north to south, are successively  $20^{\circ}7$ ,  $13^{\circ}9$ ,  $6^{\circ}8$ , and almost  $0^{\circ}$ . The gradual decrease of the differences in this series extending over  $28^{\circ}$  of latitude is very striking. Further to the south, under the tropics, the isothermal lines are every where parallel to the equator in both hemispheres. We see, from the above examples, that the questions often asked in society, how many degrees America (without distinguishing between the eastern and western shores) is colder than Europe ? and how much the mean annual temperature of Canada and the United States is lower than that of corresponding latitudes in Europe ? are, when thus *generally expressed*, devoid of meaning. There is a separate difference for each parallel of latitude, and without a special comparison of the winter and summer temperatures of the opposite coasts, it will be impossible to arrive at a correct idea of climatic relations, in their influence on agriculture and other industrial pursuits, or on the individual comfort or discomfort of mankind in general.

In enumerating the causes which produce disturbances in the form of the isothermal lines, I would distinguish between those which *raise* and those which *lower* the temperature. To the first class belong the proximity of a western coast in the temperate zone ; the divided configuration of a continent into peninsulas, with deeply-indented bays and inland seas ; the aspect or the position of a portion of the land with reference either to a sea of ice spreading far into the polar circle, or to a mass of continental land of considerable extent, lying in the same meridian, either under the equator, or, at least, within a portion of the tropical zone ; the prevalence of southerly or westerly winds on the western shore of a continent in the temperate northern zone ; chains of mountains acting as protecting walls against winds coming from colder regions ; the infrequency of swamps, which, in the spring and beginning of summer, long remain covered with ice, and the absence of woods in a dry, sandy soil ; finally, the constant serenity of the sky in the summer months, and the vicinity of an oceanic current, bringing water which is of a higher temperature than that of the surrounding sea.

Among the causes which tend to *lower* the mean annual temperature I include the following : elevation above the level of the sea, when not forming part of an extended plain ; the