

higher summer temperature of the remainder of the continent of France, are likewise manifested, in some degree, between Europe and the great continent of Asia, of which the former may be considered to constitute the western peninsula. Europe owes its milder climate, in the first place, to its position with respect to Africa, whose wide extent of tropical land is favorable to the ascending current, while the equatorial region to the south of Asia is almost wholly oceanic; and next to its deeply-articulated configuration, to the vicinity of the ocean on its western shores; and, lastly, to the existence of an open sea, which bounds its northern confines. Europe would therefore become colder* if Africa were to be overflowed by the ocean; or if the mythical Atlantis were to arise and connect Europe with North America; or if the Gulf Stream were no longer to diffuse the warming influence of its waters into the North Sea; or if, finally, another mass of solid land should be upheaved by volcanic action, and interposed between the Scandinavian peninsula and Spitzbergen. If we observe that in Europe the mean annual temperature falls as we proceed, from west to east, under the same parallel of latitude, from the Atlantic shores of France through Germany, Poland, and Russia, toward the Uralian Mountains, the main cause of this phenomenon of increasing cold must be sought in the form of the continent (which becomes less indented, and wider, and more compact as we advance), in the increasing distance from seas, and in the diminished influence of westerly winds. Beyond the Uralian Mountains these winds are converted into cool land-winds, blowing over extended tracts covered with ice and snow. The cold of western Siberia is to be ascribed to these relations of configuration and atmospheric currents, and not—as Hippocrates and Trogus Pompeius, and even celebrated travelers of the eighteenth century conjectured—to the great elevation of the soil above the level of the sea.†

If we pass from the differences of temperature manifested in the plains to the inequalities of the polyhedric form of the surface of our planet, we shall have to consider mountains either in relation to their influence on the climate of neighboring

* See my memoir, *Ueber die Haupt-Ursachen der Temperaturverschiedenheit auf der Erdoberfläche*, in the *Abhandl. der Akad. der Wissensch. zu Berlin von dem Jahr 1827*, s. 311.

† The general level of Siberia, from Tobolsk, Tomsk, and Barnaul, from the Altai Mountains to the Polar Sea, is not so high as that of Mannheim and Dresden; indeed, Irkutsk, far to the east of the Jenisei, is only 1330 feet above the level of the sea, or about one third lower than Munich.