

Atacama, and a dry shore region northward through Peru; while the branch going southward, which encounters increasing cold, makes one of the wetter areas of the globe, Valdivia having an annual rainfall of 115 inches. The same effects of the two branches are produced on the western border of North America, the western border of north Africa and Europe; in western south Africa; in western Australia. (See Rainfall map by E. Loomis, *Amer. Jour. Sci.*, III., xxiii., 1882.)

On the contrary, the wind from the east over the tropics is a warm wind charged with moisture. After striking North and South America it bends away from the equator into cooler latitudes, and makes a great moist region of eastern North America, and of eastern South America, with excessive moisture over large areas; and the position of the higher mountain range of America, far toward the western border, lays open the whole interior to the moisture. The trade winds produce a similar effect on the eastern side of Eurasia and Australia, making the border of China one of the wet regions of the globe, and so also a narrow mountain border for Australia.

Mountains have cold summits, and consequently are great condensers of moisture. They therefore take a prominent part in the above mentioned system of results, and also produce local effects in other regions.

The first high cold land struck by the winds takes a large portion of the moisture out of them and leaves less, or little, for the region beyond. And thus robbed, even the trades may become dry winds. The contrasts are well shown on the opposite slopes of the Hawaiian mountains—the eastern receiving much rain from the trades, the western getting almost none. For the same reason the interior of North America is relatively dry, the amount of precipitation over the Atlantic border being 40 to 50 inches a year, and in the interior 20 to 40 and less. So it is also with the interior of South America as compared with the coast region to the north; and Sahara, begun in northwestern Africa, stretches across the continent. The great Desert of Gobi is thus shut off from sea winds, and winter winds blow from it instead of into it. The higher ridges along the Rocky Mountain summit raise locally the amount of precipitation, but it falls off again over all the western slopes, and continues very small to the Sierra Nevada, averaging less than 10 inches a year over a broad belt from the Great Salt Lake region to the Gulf of California.

It is apparent from the facts which have been presented that the continents have derived many of their individualizing characteristics, their several diversities of surface, climate, and life, from the disposing influence of the earth's rotation. This is strikingly apparent in the existing flora and fauna, briefly described in the following pages; it becomes still more evident after a review of the succession of faunas and floras in the earth's history in which the individual features of each continent are traced back far toward "the beginning."

The great truth is taught by the air and waters, as well as by the lands, that the diversity about us, which seems endless and without order, is an