

than in temperate climates. Thus, between the tropics, the barometer usually varies only about one-third of an inch ; while in temperate climates, the changes amount to upwards of one-tenth of the whole height.

The pressure of the atmosphere decreases as we ascend above the earth's surface ; and for equal ascents, this decrease of density, is, in what is called, geometrical progression. Thus, after an ascent of three miles, the density of the atmosphere is found to be only one half of what it is at the surface of the earth, or equal to a column of mercury fifteen inches in height ; at six miles, the barometer would stand at one-fourth of its usual height, or seven and a half inches ; at nine miles of elevation, at three inches and three quarters ; and, at fifteen miles, nearly at one inch only. Hence, though from various circumstances, the atmosphere has been inferred to extend from forty to forty-five miles above the earth's surface ; by far the greater portion of it is always within fifteen or twenty miles. The distance, however, to which the atmosphere extends, must be different in different latitudes ; for the rotation of the earth upon its axis ; and the greater, and more direct influence of the solar heat near the equator, will necessarily cause the atmosphere to be higher in the equatorial, than in the polar regions ; while at the poles, the atmosphere must be lower, than over any other part of the earth's surface.