

this hypothesis is controverted by the great German meteorologist Dove. The mean temperature of the north pole of the globe is probably very near  $46^{\circ}$  F.; it is not impossible, therefore, that an open and iceless sea exists in its vicinity, as Dr. Kane asserts.

If we consider separately the summer and winter temperatures in the different regions of the earth, we can trace the lines on which those temperatures will be always the same : that is,—

The *Isothermal*, or lines of equal summer temperature ; and

The *Isocheimal*, or lines of equal winter temperature.

These are fully as irregular as the general isothermal curves. Between the tropics, however, they do not differ much from those of the parallels. There the seasons occur with tolerable regularity, and they are but two—a dry season, and a wet or winter season. The former lasts four or five months ; the latter seven to eight, with occasional breaks of fair weather.

When we lay down the isothermal curves, it is necessary we should, as far as possible, choose places of equal elevation above the sea, for the simple elevation of any locality is of itself sufficient to lower the temperature. This remark leads us to consider the important question of the decrease of the atmospheric temperature when we mount above the surface of our globe.

The extent to which we must rise in the air to secure a decrease amounting to one degree, varies greatly according to the locality, the season of the year, and the hour of the day. Under the torrid zone, Humboldt ascertained that the elevation requisite was 650 feet for each degree ; in Switzerland, 450 feet seems to have been the mean result obtained from a great number of observations.

These figures, however, cannot be generalized. According to an English meteorologist, Mr. Glaisher, who made, in 1862 and 1863, some bold aerostatic ascents with the view of determining the law of the decrease of atmospheric temperature in the ratio of elevation of level, the thermometer sinks at first one degree to every 2000 feet (when we have reached the absolute altitude of 11,000 feet). The correction by which our physicists reduce the mean temperatures at