

minutes on a surface perpendicularly exposed to it; and from this he will have no difficulty in calculating the depth of water over the whole area of the globe, land and sea, *per annum*, which it would suffice to convert into vapour if wholly expended in so doing. This he will find to amount, as nearly as may be, to nine feet.* Meteorologists, collecting the registers of "rainfall" in all regions of the globe, and comparing and calculating on their indications, have come to the conclusion that taking one region with another, the quantity of water actually precipitated from the air *per annum*, in the forms of rain, hail, snow, and dew, would suffice to cover the whole of its surface to a depth of five feet. Remains *the equivalent* of four feet, expended in warming the soil; which is partly *radiated* away, and partly communicated to the air, thus going to maintain the average temperature, *according to its climatic distribution*. And as solely expended on this last-mentioned object, we have to reckon fully one-third of the sun's total radiation, or one-half of that already accounted for, which is absorbed by the air, or rather by the moisture in it, before reaching the earth. The joint effect of these two portions is, as we have seen, to maintain the air in

* We will make the calculation for him. An inch of ice melted in 2 hours 13 minutes over a great circle of the globe perpendicularly exposed to the sun, corresponds to a quarter of an inch in that time over the whole surface (which is four great circles), or, per annum, to 987.75 inches; or to nine-tenths of this, or 890 inches of water raised 135° Fahr. in temperature; or (taking the initial temperature of the water evaporated on an average at 60° Fahr.) to 108 inches or 9 feet heated 1112° to convert it into steam.