Dalton's table of the tension, or elastic forces of vapour at different temperatures, it appears that the tension of vapour at 32° is equal to the weight of ·200 inch of mercury; and that the difference between the tension of vapour at 32° and the tension of vapour at 33°, the value, namely, of the first term or unit, in our assumed arithmetical series, is ·007 inch of mercury. Now, the difference between 32°, and 80°, the mean temperature at the level of the sea under the Equator, is 48°. Supposing, therefore, each of these 48 degrees to increase in an arithmetical progression, ·007 for each degree; the tension for the whole 48 degrees will amount to ·336; which tension added to ·200, the tension at 32°, gives ·536 inch, as the tension corresponding to the vapour at 80°, the temperature of the earth's surface under the Equator. But, by Dr. Dalton's same table of tensions, we find that ·536 does not represent the proper tension of vapour at 80°, but of vapour at about 61° only. According to this estimate it follows, that at the Equator, while the temperature of the air over the earth's surface is 80°, the point of saturation with vapour is 19° below that temperature. Hence, at the Equator, the air immediately incumbent on the earth's surface must be comparatively dry. Moreover, the cause which has been thus shown to produce the dryness of the Equatorial air, at the earth's surface, must all