

height, in all latitudes.* Hence it happens, that as the mean temperature of the equator is about $81\frac{1}{2}^{\circ}$, the height in the air at which the mean snow line should be found = $49\frac{1}{2}^{\circ} \times 352 \text{ feet} = 17,424$ (obs. 16,829), and in any other lat. = $(81\frac{1}{2}^{\circ} \text{ N. cos. lat.} - 32) 352$. In W. lat. $56^{\circ} 50'$, nearly that of Ben Nevis, this gives $(44.6 - 32) 352 = 4435$ feet; and as Ben Nevis is 4350 feet high, and is not covered perpetually with snow (which melts in July and August, except in shaded parts), the rule appears exact enough for the longitude of Britain.

Another cause productive of differences of temperature on surfaces equally exposed to the sun's influence, is the peculiar distribution of land and water; for these dissimilar parts of the globe unequally absorb and unequally give out heat; and one of them diffuses itself so as to obliterate many original differences of climate. Thus, on different circles of longitude, places which, having the same latitude, should have the same mean annual temperature, may, and do, differ in this respect several degrees, from the dissimilitude of the ground, and from the different relations they bear to the masses of land and surfaces of sea. Under the equator the land is generally hotter than the sea; towards the poles the reverse obtains. The sea climate admits of less extreme variations from the torrid to the frigid zone, than the land, and sea-shores participate in this mildness. Thus we have oceanic, littoral, insular, and continental climates, which differ sometimes by several degrees. The formula, therefore, given above (which expresses the average mean temperature in terms of the latitude) requires modification from this cause, as sir D. Brewster has shown in the essay already quoted. From what has

* About 1° of Fahrenheit for every 100 yards of ascent is a common correction used with the mountain barometer. A more exact proportion is supposed to be 1° for every 352 feet, as found by comparing Geneva and Great St. Bernard. Mr. Atkinson, in *Memoirs of the Astronomical Society*, Professor Challis (*Cambridge Phil. Trans.*), have treated the subject mathematically. A general view of the state of knowledge on the distribution of terrestrial heat may be found in Professor Forbes's Report on Meteorology to the British Association.