

Atlantic 0.014 inch. Thus it is shown that these amplitudes diminish as the ocean becomes more land-locked with continents, or as the anticyclonic region, which characterises these parts of the globe, becomes better defined and currents of air are poured down more steadily from the higher regions of the atmosphere.

“In the open ocean the morning minimum of pressure is largest in the equatorial regions, and it diminishes with latitude; but the rate of diminution with latitude, through anticyclonic and other regions, is generally less, and is more uniform than is the case with the afternoon minimum. Further over the open sea, in high latitudes, the diurnal barometric tide shows only one maximum and one minimum.

“During the cruise, observations of the force of the wind were made on 1202 days, at least twelve times each day, 650 of the days being on the open sea, and 552 near land. As regards the open sea, the diurnal variation of the force of the wind is exceedingly small, the difference between the hour of least and greatest velocity being less than a mile per hour, and the hours of occurrence of the small maxima and minima vary with the different oceans.

“Quite different is it with the winds encountered near land, the force of the wind there giving a curve as pronouncedly marked as the diurnal curves of temperature or pressure. The minimum force occurs from 2 to 4 A.M. and the maximum from noon to 4 P.M., the highest velocity being at 2 P.M. The curves for each of the five great oceans give one and the same result, or a curve closely congruent with the curve of diurnal temperature. The differences between the hours of least and greatest velocity are:—Southern Ocean $6\frac{1}{2}$ miles, South Pacific $4\frac{1}{2}$ miles, South Atlantic $3\frac{1}{2}$ miles, North Atlantic and North Pacific 3 miles per hour.

“As regards each ocean the velocity of the wind on the open sea is very considerably in excess of that near land, and it is to be specially noted that in no case does the maximum velocity near land, attained at or shortly after noon, reach the velocity of the wind on the open sea. The 650 daily observations on the open sea gave a mean hourly velocity of $17\frac{1}{2}$ miles, whereas the 552 near land give a velocity of only $12\frac{1}{2}$ miles per hour. The difference is greatest at 4 A.M., when it amounts to 6 miles per hour, and least at 2 P.M., when it is a little less than 3 miles per hour.

“The observations made in the region of the northeast trades in the Atlantic in 1873 show a small diurnal variation in the direction of the wind, the variation being from E. $47^{\circ} 5' N.$ at 2 to 6 A.M. to E. $56^{\circ} N.$ at 10 A.M. to 2 P.M., being thus $8^{\circ} 55'$ towards north during the hottest hours of the day in the regions of the northeast trades of the Atlantic.

“The variation in the amount of cloud in the sky over the open sea is very small, there being indicated, however, two maxima, the one about or shortly after sunrise and the other in the early part of the afternoon; and two minima, the one at noon and the other