

For the study of phenomena accurate observations are necessary. In meteorology we have to deal not with one phenomenon but with many, each adding its quota to form the aggregate which we term weather. As the instruments used for observing the phenomena are fairly familiar to you I will confine my remarks to a few salient points. The instrument of first importance is the barometer, by means of which the pressure of the atmosphere is measured; we might call it the lead line or sounding rod of the atmospheric ocean. Although there are the two forms of barometer—mercurial and aneroid—yet for accurate and precise work the former only is used. Air, in common with all other forms of matter, is acted on by the attraction of gravity, and consequently possesses weight. The pressure of the air is a necessary consequence of its weight, and is equal, at the level of the sea, to about fifteen pounds to the square inch.

If we take a glass tube of about three and a-half feet in length, filled with mercury, and hermetically sealed at one end, while the other end is bent like a syphon, or is inverted into a cistern of mercury, we have a means of measuring the pressure of the atmosphere and its consequent fluctuations. Here in Ottawa, less than 200 feet above mean sea level, we are subject on all sides to a pressure of nearly 15 lbs. to the square inch to prevent us from bursting, which we undoubtedly would, were that pressure removed.

The barometer responds to the fluctuations and pulsations of the atmospheric pressure.

Suppose now we have taken barometric readings at the same absolute time at various stations from Halifax to Vancouver; these readings, although correct, would not give us the true measure for comparison of the various pressures, from the fact that they would not be taken from the same plane—the level of the sea—to which all observations must be reduced before comparisons can be instituted and inferences drawn. The fluctuations of the atmosphere make themselves felt on our Great