

### WEATHER AND CLIMATE

In a discussion at the meeting of the Boston group of the Society on May 23, 1931, the definitions of weather and of climate were discussed. Later, Mr. H. H. Clayton summarized his view, which he believed was representative of the thought of a number of dynamically minded climatologists:

"There is no dividing line between weather and climate. (1) In the case of what is ordinarily called weather there will be, for example, in New England a day or two of southerly winds during which New England may have the climate of the Carolinas, then a turn to cold northerly winds when for a day or two New England may have the climate of Canada or Labrador. (2) In the case of climate the geological records show that there have been recurring intervals when for long epochs New England enjoyed the climate of Virginia or the Carolinas and other epochs when New England was covered with ice and had the climate of Greenland. Between these two extremes there is evidence of oscillations of every conceivable length of varying degrees of intensity. These oscillations may have lengths of decades or centuries, but there is found in them the characteristics of ordinary weather. During the warm periods (be they days or weeks or epochs) the pressure distribution is such that it brings to New England warm winds and warm waters from the south, while in the cold periods the distribution of pressure is such that it brings cold winds which carry the warmer waters south and cause an upwelling or inflow of cold waters.

"In brief the idea outlined above is that what is ordinarily called weather may be described as climatic changes of short period, occupying a few days, weeks, or years, while what are ordinarily called climatic changes may be described as weather changes of long period occupying decades, centuries or geological epochs."

### AIRPLANE OBSERVATIONS

The Weather Bureau on July 1, 1931, began upper air observations by airplane at Chicago, Cleveland and Dallas, and on August 8th at Omaha. Airplanes are operated on a contract basis and carry an aerometeorograph which records the temperature, humidity and pressure, but not the wind, as was formerly done by means of kites.

These flights are made to provide free-air data for the morning forecasts at Washington and the other District Forecast centers, and in order to reach these centers on time they are made before daylight during most of the year.

The superiority of airplanes over kites is their regularity; they are not dependent on the vagaries of the wind, nor are they stopped by unfavorable weather. After more than nine months of operation not one daily flight has been missed at Dallas and almost equally complete records have been obtained at the other stations. The flights are made on schedule, and nearly the same altitude is reached day after day instead