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VISIBILITY.

Visibility is a meteorological factor of growing importance. At one time it was considered of scientific interest only. However, its practical significance has increased during recent years. This is partly due to the progress made in aviation, where visibility is perhaps the most important meteorological consideration, and partly to a recognition of its value in weather forecasting. During the World War, visibility was an important factor in field maneuvers, coast defense, naval movements and artillery fire.

In determining the squall and steering lines of cyclones in the system of weather forecasting developed by Professor V. Bjerknes, visibility is a significant consideration. The passage of a line of discontinuity marking the frontier between masses of air of different origin is made apparent to the observer by various changes, among which visibility is not the least important. In International Weather Telegraphy in Europe provision is made to report visibility up to 30 kilometers, according to a graduated scale. At Blue Hill Meteorological Observatory of Harvard University, near Boston, visibility is recorded daily at 9 a.m. and 2 p.m. The scale used is an arbitrary one based upon the general clearness of the atmosphere and the distinctness with which certain places of known distance can be seen.

While there appears to be no recognized or standard scale of visibility, it is believed that every weather observer ought to include in his regular observations some indication of visibility. Even if routine does not require this observation it is desirable to include such an estimate under remarks or miscellaneous notes. Until a standard scale is adopted it is perhaps sufficient to record visibility in a simple scale of four, viz.—excellent, good, fair, and poor. It is believed that visibility is now of sufficient importance to justify record along with other meteorological data. A long-continued record of visibility made at selected hours of the day and simultaneously with the usual meteorological observations would eventually furnish valuable data whose correlation might in the near future accelerate the progress of both weather forecasting and aviation.

Obviously, haze, smoke and dust in the atmosphere influence visibility. But humidity, convection and turbulence are also controls. Altitude above sea level and therefore the density of the atmosphere are also to be considered. Visibility is an inviting field of meteorological research in which the investigator may discover truths of immediate and practical value. Graduate students in meteorology or physics are respectfully urged to consider this field before selecting a thesis subject.—*A. H. Palmer.*