

A Science Service Feature

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? WHY THE WEATHER ? Mailed November 8, 1929

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REFLECTION FROM THE EARTH'S SURFACE

Of the solar radiation that falls upon snow-covered ground or upon the upper surface of the clouds about 70 per cent, is reflected. Of that falling upon snow-free ground or upon water the portion reflected is very much less. It averages perhaps 7 per cent., but varies with the nature of the surface.

Dr. G.C. Simpson, director of the British Meteorological Office, has explained the low temperature of the Antarctic summer as due to the fact that the snow reflects away the abundant sunshine received. Since snow has this striking effect it is probable that the different "reflectivities" of different parts of the earth that vary as the land is plowed, and again as crops ripen, may have a considerable though as yet almost completely neglected effect upon local weather and climate.

Meteorologists have just begun to measure the reflectivity of different kinds of surface in a somewhat comprehensive way. Measurements made on small samples of earth, vegetation, etc., in the laboratory are not sufficiently representative; hence the observations are made from an airplane with a special form of photometer, or light-measure, devised for this purpose by an English meteorologist, Dr. L.F. Richardson.

In accordance with an international agreement, investigations of this subject are now in progress in England, France, Italy and the United States. The American observer, Mr. I.F. Hand of the U.S. Weather Bureau, makes his measurements from an Army airplane flying near Washington, D.C.

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