A Science Service Feature

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? WHY THE WEATHER ?

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COMFORTABLE AND UNCOMFORTABLE ATMOSPHERES

Human sensations of temperature depend mainly upon the rate at which heat is dissipated from the body. This rate is controlled in part by the temperature of the surrounding air, but also in part by the humidity and the air movement. For example, suppose on a certain day the thermometer reads 80, the air is nearly saturated with water vapor, and there is little or no wind. We shall hear people complaining of the heat. On another day, with a temperature of 90, low humidity and a brisk breeze, everybody feels comfortably cool. In the latter case the dryness and movement of the air cause rapid evaporation from the skin, which is thus cooled, accelerating the loss of heat from the body.

During the past fifty years many instruments have been devised for measuring the cooling power of the atmosphere as an index of human comfort. These include the "deperditometer," the "psuchrainometer," the "homoeotherm," the "comfortimeter," the "caleometer," the "frigorimeter," and the now widely used "katathermometer," invented by Prof. Leonard Hill. Most of them measure the rate of heat loss from a warm body, either dry or moist.

The most elaborate investigations ever made to determine the relations between atmospheric conditions and human comfort are those that have been in progress for the last few years at the Research Laboratory of the American Society of Heating and Ventilating Engineers in Pittsburgh. The conductors of the experiments have recorded their sensations of comfort and discomfort when exposed to various combinations of temperature, humidity and air movement, together with the effects of clothing, occupation, etc.

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