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? WHY THE WEATHER ?

Dr. Charles F. Brooks,
of Clark University,
discusses:

PROPERTIES OF AIR

The air we live in is a mixture of gases and has the usual properties of a gas. To consider a few of its characteristics: It is mobile and flows freely and sometimes very rapidly, producing winds of tremendous power. It has low density and is capable of unlimited expansion. It is highly compressible and elastic, forming a good medium for the transmission of sound waves. Imagine the impossible, a person living in a vacuum, with no air to transmit sound waves. To hear an approaching train he would have to put his head against the rail of the track! Air is a very poor conductor of heat, its conductivity is only 1/20,000 that of copper. On this depends largely the blanketing effect of a snow cover, as snow contains so much air. Yet air conducts heat much better than nothing at all, for to make a thermos bottle we remove some of the air between the two containers, producing a partial vacuum.

Air has an extremely low specific heat (about 1/3300 that of an equal volume of water). That is, it would take only about 1/3300 as much heat to warm a given volume of air one degree as to warm the same volume of water one degree. In spite of this, the lower air is not very much warmed by the passage of the sunlight through it, as it does not absorb radiant heat readily. It is warmed rather from contact with the warm earth.

(Tomorrow: The Gases We Live In)

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