

A Science Service Feature

Released on receipt  
but intended for use  
August 20, 1926

? WHY THE WEATHER ?

Mailed August 13, 1926

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WHY THE TEMPERATURE STAYS UP ON MUGGY NIGHTS

The muggier the weather, the hotter we feel with a certain temperature, and the more likely the temperature is to remain high and contribute to our discomfort all night. The mugginess or high humidity makes us feel hot and sticky simply because the evaporation of sweat and of water from our lungs is curtailed by the large amount of vapor already in the air. We commonly rely in part on the cooling effects of this evaporation to keep our bodily temperature normal. When this means of heat elimination partly fails we necessarily feel hot even though the thermometer may not indicate a very high temperature.

Usually the temperature of the ground, and with it that of the lower air, falls rapidly after sunset and removes the chief source of heat. The ground, raised to a high temperature by the solar radiation is, after sunset, radiating its excess of stored heat. The heated air is also radiating, but downwards as well as upwards. Generally, however, this return of heat is too small to match the radiation from the ground until the temperature of the earth's surface has fallen some 10 or 15 degrees Fahrenheit, and has thus greatly reduced its output of heat.

Now the larger the return radiation from the air the smaller will the fall in temperature be before a balance is reached. So since warm muggy air is a good radiator we find ourselves, on hot muggy nights, cheated out of the customary fall in temperature.

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21st and B Sts.,  
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