A Science Service Feature

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? WHY THE WEATHER ?

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INSTABILITY OF MOUNTAIN AIR

A mountain climber can get considerable amusement from a thermometer, and if he is meteorologically inclined he can obtain some interesting examples of text-book principles. Take, for example, the standard statement that when the drop in temperature with increase in height exceeds about 5 degrees Fahrenheit per thousand feet the lower air is likely to be displaced by incursions of heavier air from above, and that when the difference exceeds 20 degrees per thousand feet, great instability exists and violent overturning of the air is likely.

On a day when the sun is shining one rarely finds the temperature of the greater heights cooler by less than 5 degrees per thousand feet. Where there are protected spots and some woods, the temperatures can rise several degrees in the course of only a few minutes' stay of the air. The limit of such a rise occurs shortly, when the increasing lightness of the heated air favors the intrusion of a gust of cooler heavier air.

The upward displacement of mountain-side and valley air on a sunny day is usually responsible for the local formation of numerous cumulus clouds. When clouds begin forming the first ones are likely to be over the mountains. When they reach a size large enough for showers the first rain occurs over or to leeward of the heights. The mountain is a fine place to observe local convection and its effects.

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