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A Science Service Feature

? WHY THE WEATHER ?

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WATER VAPOR AND ALTITUDE

Mountain air is generally cleaner and drier than lowland air; from a high mountain the sky appears a deep violet and the sunlight is intense. Astronomers, therefore, have a fondness for climbing out of the lower air and perching their observatories upon mountain tops. Instead of being evenly mixed through the air, water vapor is largely confined to the lower levels, although it is a relatively light gas. Water vapor comes, of course, from the surface of the earth, it is carried upward by convectional currents or other winds. The thin high cirrus clouds mark about the upper limit reached by appreciable water vapor, and much of it condenses and falls down before attaining this height. Go up in the air about 6500 feet, or a little higher than Mt. Washington, and you leave half of the water vapor of the atmosphere below you. Atmospheric pressure, on the other hand, becomes one-half that at the earth's surface only at a height of 16,000 to 20,000 feet; that is, one would have to reach this height in order to get above one-half the total mass of the air.

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