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? WHY THE WEATHER ?

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OUTDOOR HUMIDITIES IN WINTER

Few people realize how very little water vapor is present in the air in cold weather. In January, for instance, the percentage of moisture in air over cold Massachusetts is about the same as in air over warm Arizona. Indeed, Massachusetts is actually drier in winter than the driest desert regions of the United States in summer. In winter the coldest regions are also the driest; thus the vapor pressure in North Dakota in January is hardly more than a third of that in Massachusetts. Both winter and summer there is more water vapor present over the Gulf States than elsewhere in the United States or Canada, though in January the place with most moisture, the southern tip of Florida, is hardly as humid as Massachusetts in July.

In speaking of humidities, there is likely to be a confusion between relative humidity and absolute humidity. Absolute humidity, which we are discussing here, means the actual amount of water vapor in a given volume of air. Relative humidity, on the other hand, means the ratio of the amount present to the amount possible at that temperature. It measures the ease with which water vapor can be put into or taken from the air. Thus we may say that the wind is damp and cold on a typical winter day, not meaning that a large amount of water vapor is present, but that the limit of moistness, always low in cold weather, has been nearly or quite reached, and hence clouds and fogs will form readily.

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(Tomorrow: Forty Below Vs. Zero)

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