There is still another beneficial result of this property: the great variation in the vapor tension of water which accompanies variation in temperature. Vapor tension measures the amount of vapor which is present in the atmosphere when it is in contact with a liquid and after it has become saturated with the liquid's vapor. Now, according to a well-known law, the rate of increase of vapor tension, or in other words the amount of vapor which the air can hold, is greater the greater the latent heat of vaporization.[1] Hence, degree by degree there is more variation in the vapor tension of water than there could be if the latent heat were lower. Such great variability in the quantity of water which the air can hold is in meteorology the most important characteristic of aqueous vapor.[2] The relationship between vapor tension and temperature (centigrade) is shown in the accompanying table.

[1] Near the freezing point an increase of 10° in temperature doubles the amount of water which the air can hold. The increase is proportional to the latent heat of vaporization according to the formulæ

$$2.3025 \log \frac{p_1}{p_0} = \frac{18 \cdot W}{1.99}\left(\frac{T_1 - T_0}{T_0 T_1}\right)$$

where W stands for the latent heat of vaporization, p for vapor tension, and T for temperature.

[2] Arrhenius, "Kosmische Physik," p. 612.