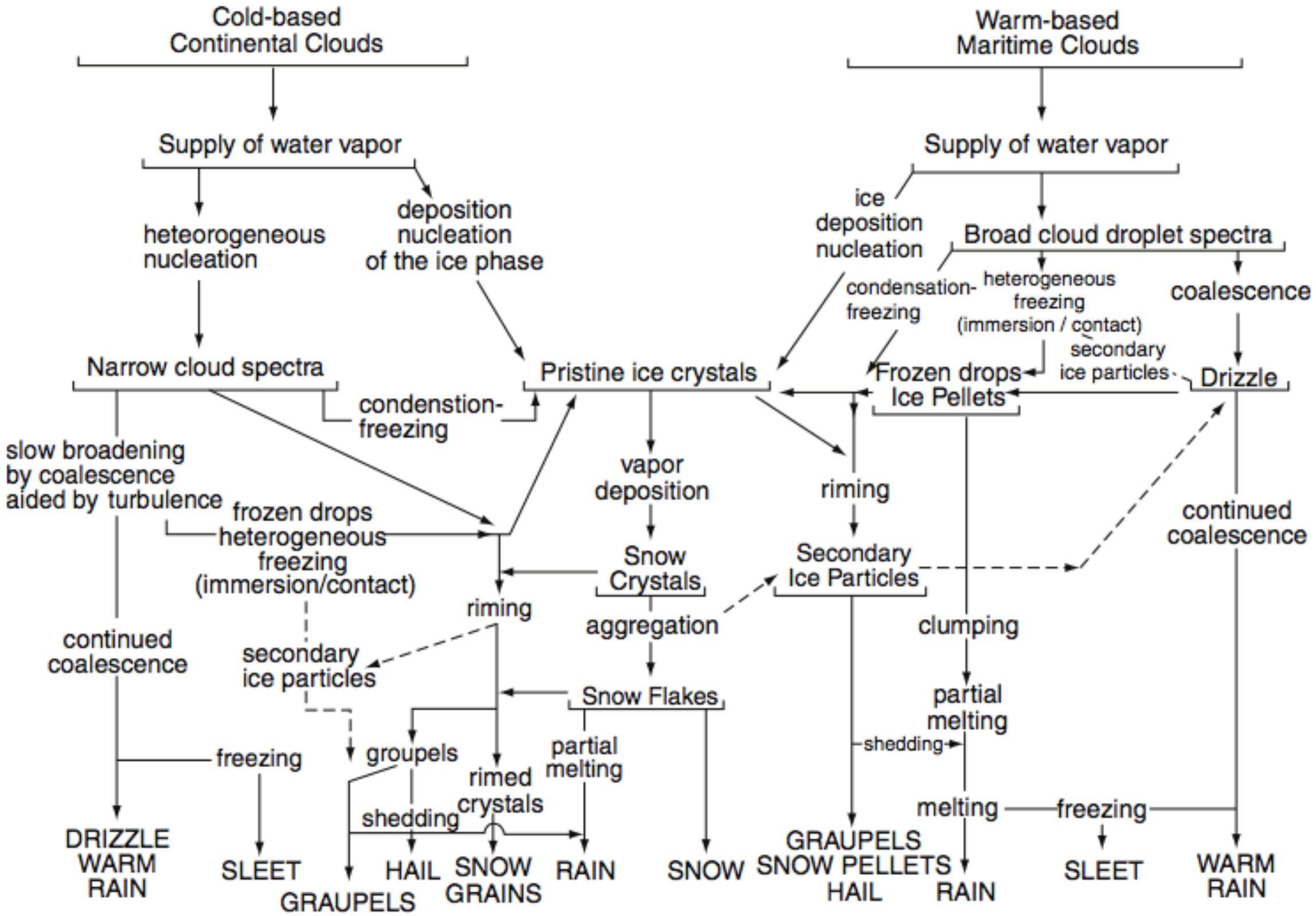

FIGURE 4.9 Flow diagram describing microphysical processes, including paths for precipitation formation. *(Adapted from Braham (1968))*

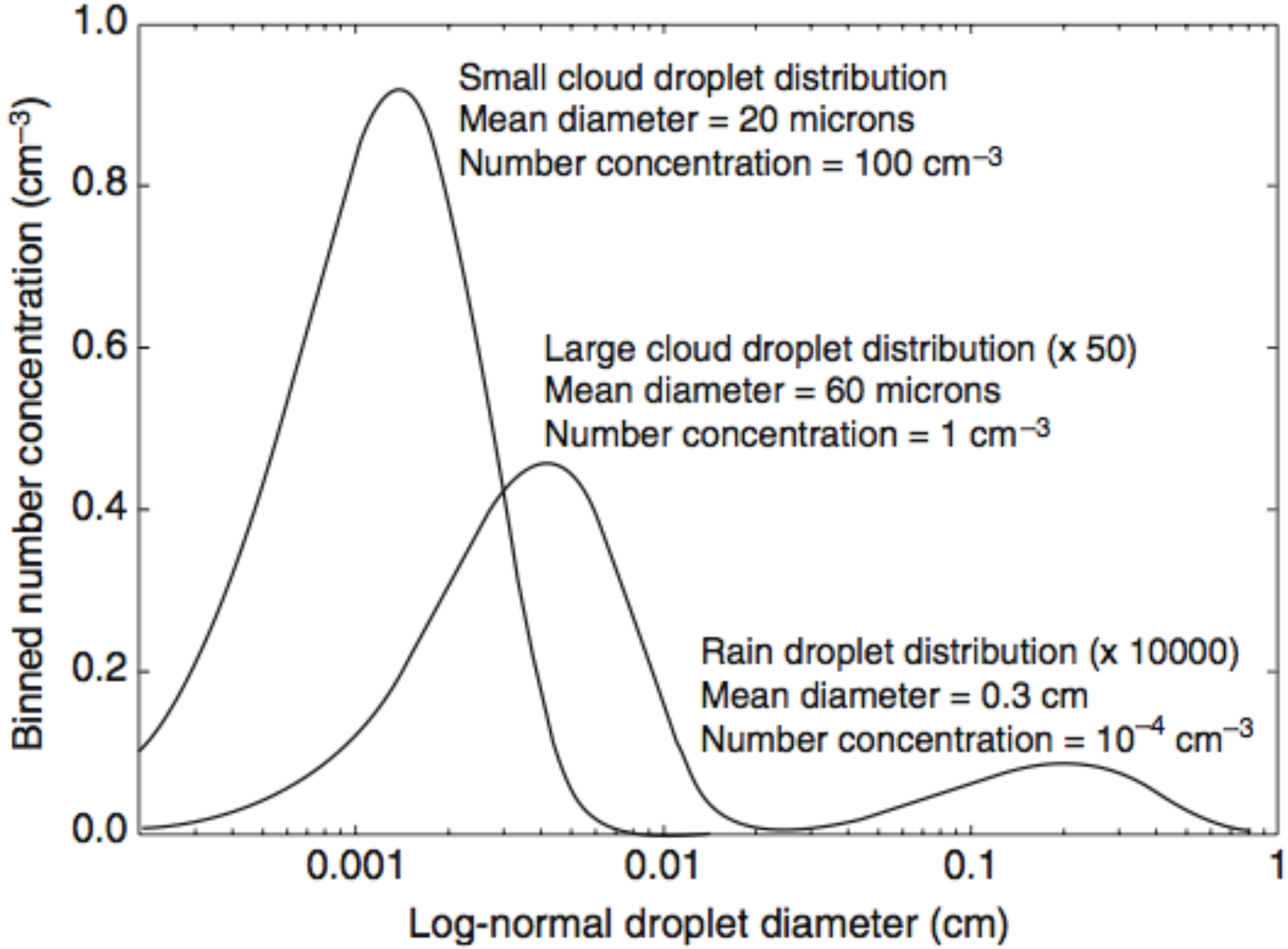

FIGURE 4.3 Droplet spectra for the rain and dual cloud droplet hydrometeor categories. For comparison to the small cloud droplet mode, the number concentration for the given diameter is exaggerated for the rain and large cloud droplet modes. *(From Saleeby and Cotton (2004))*

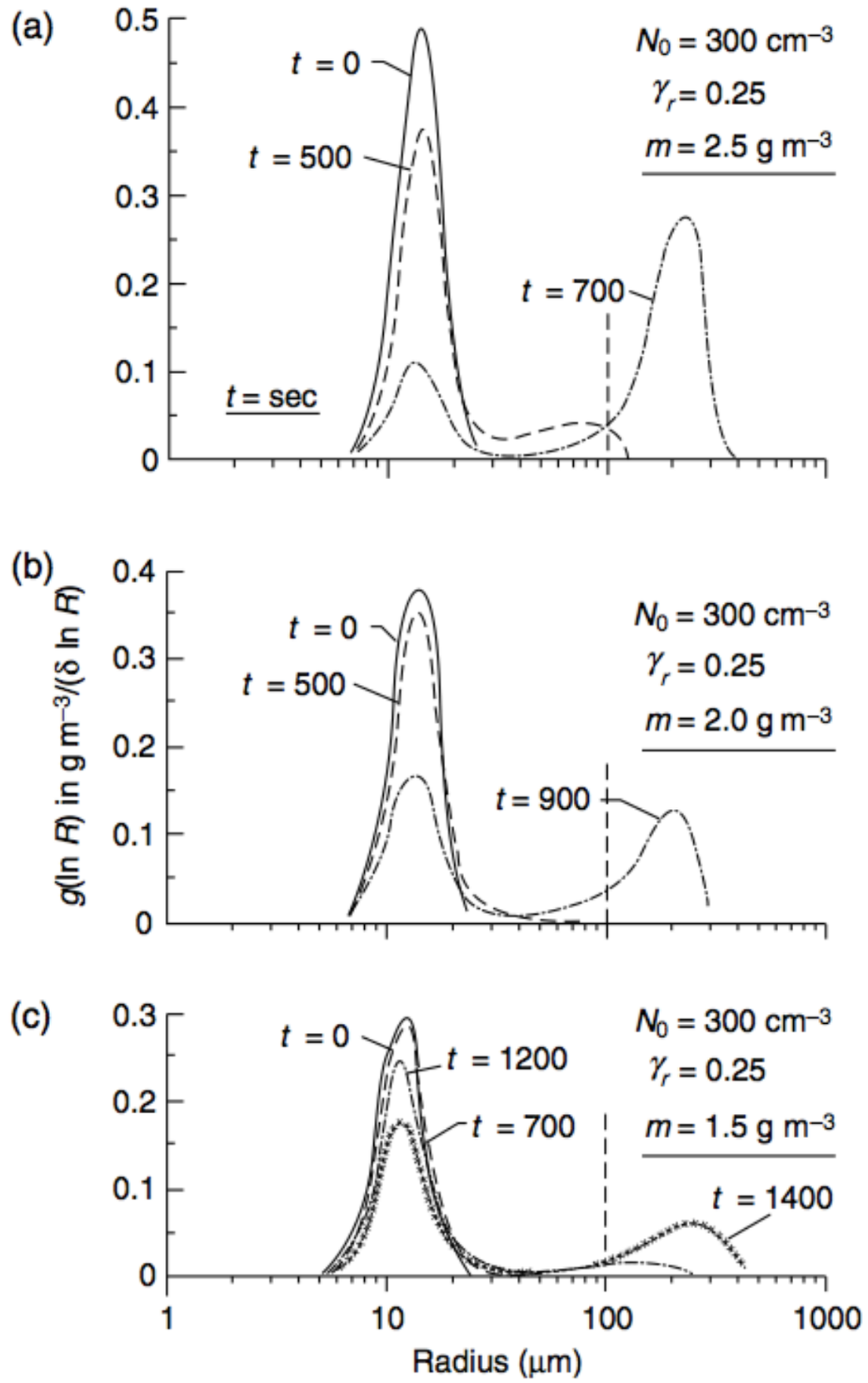

FIGURE 4.1 Computed variation in the distribution of water mass density for an initial concentration of 100 cm^{-3}, a radius dispersion of 0.25, and LWCs of (a) 2.0, (b) 1.5, and (c) 1.0 g m^{-3}. *(From Cotton (1972a))*

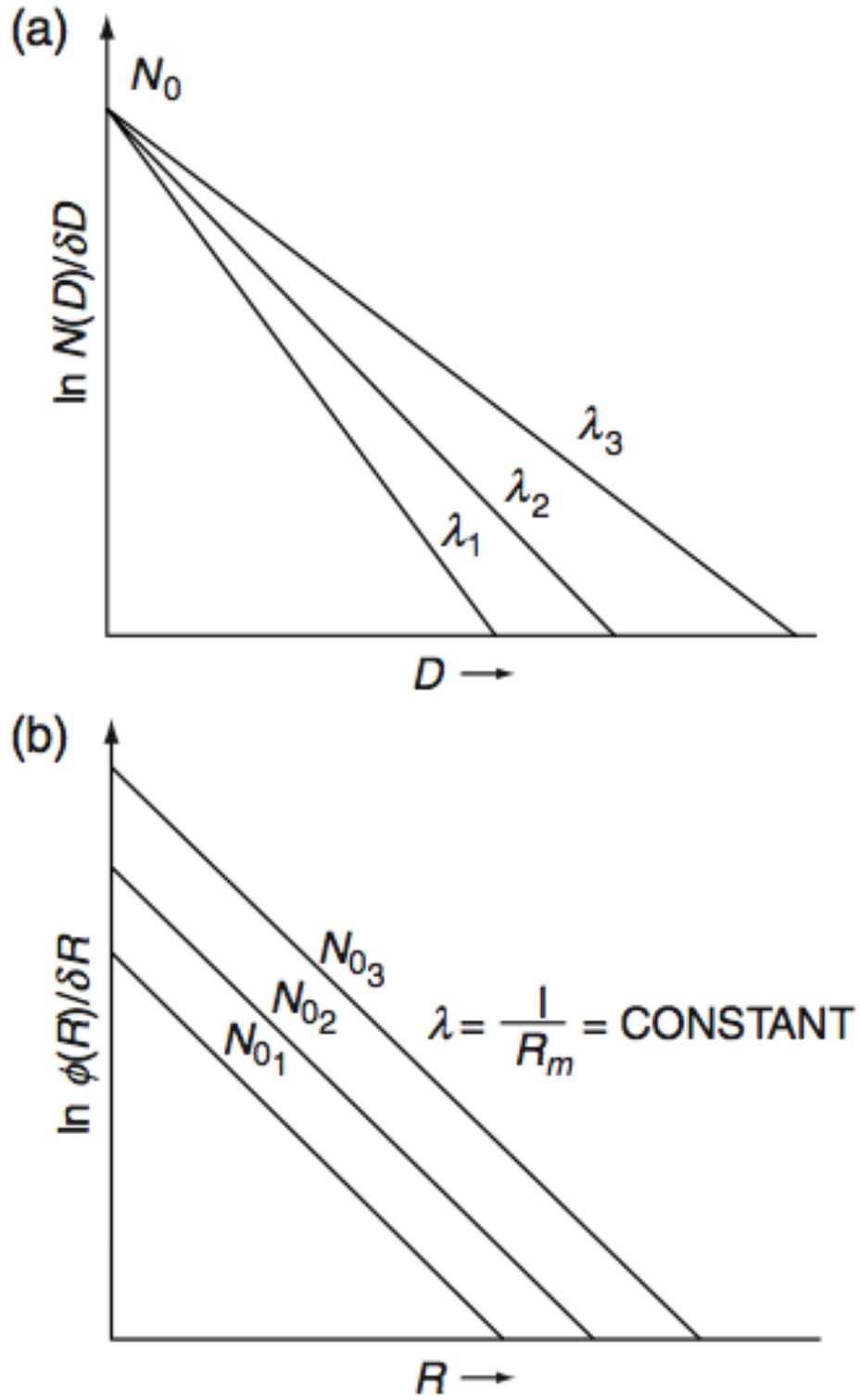

FIGURE 4.2 Schematic illustration of the exponential drop-size distribution function of Marshall-Palmer drop-size distribution. (a) Kessler's model in which N_0 is assumed constant and λ varies with rainwater content; (b) Manton-Cotton's model in which the slope $\lambda = 1/R_m$ is a constant and $N_0 = N_R/R_m$ varies with rainwater content.

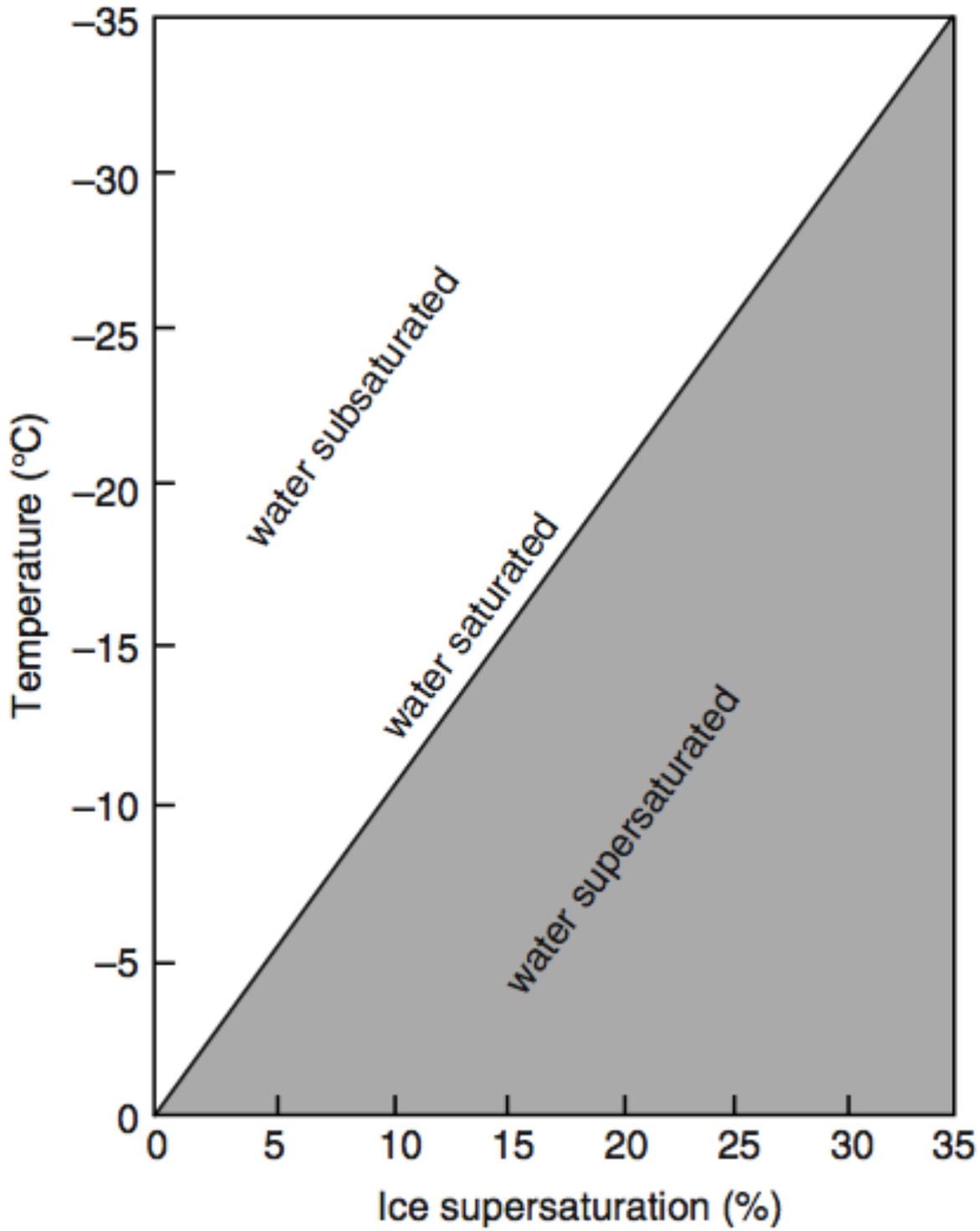

FIGURE 4.6 Supersaturation with respect to ice as a function of temperature for a water-saturated cloud. The shaded area represents a water-supersaturated cloud.

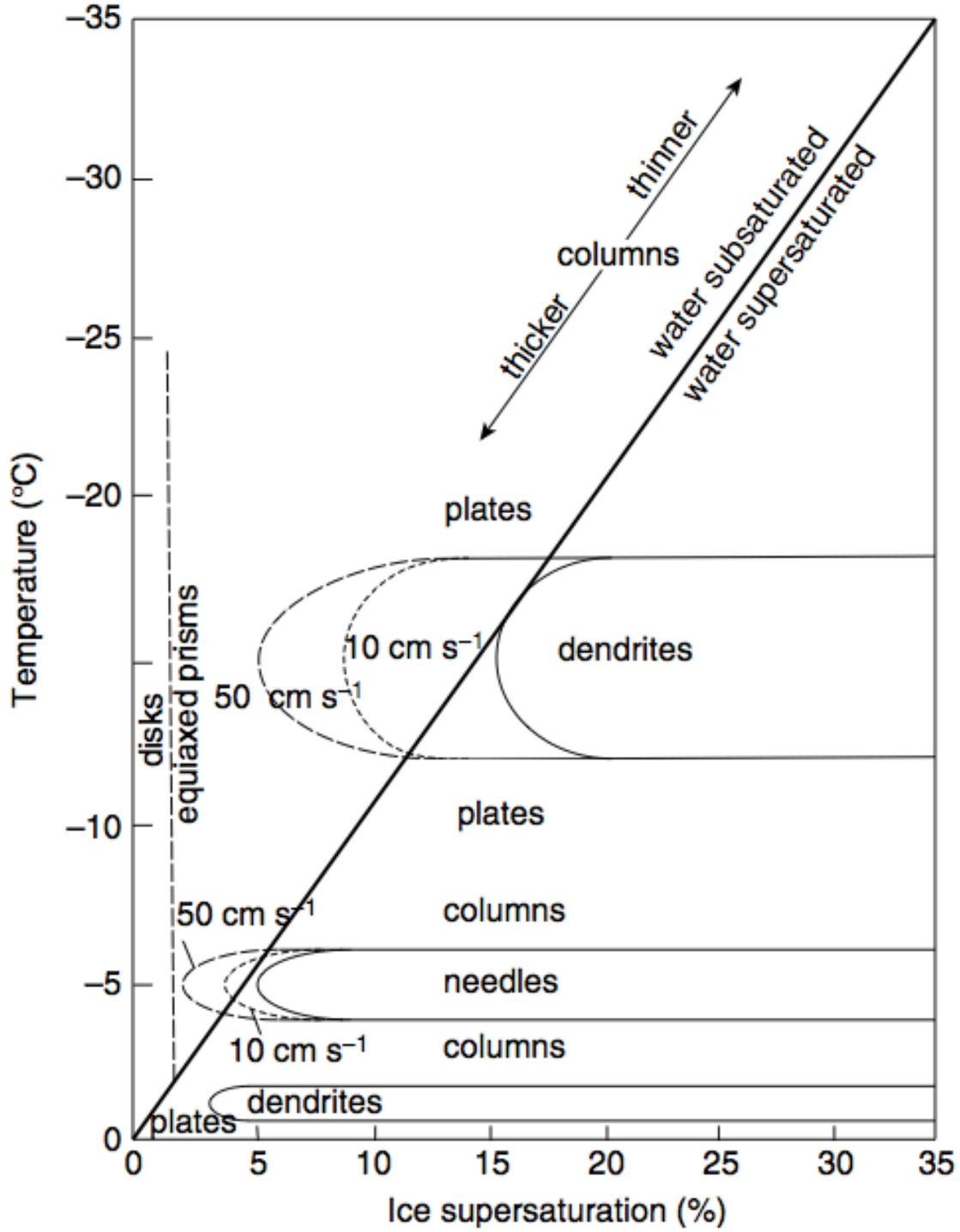

FIGURE 4.7 The shape of a crystal is related to environmental conditions in a complicated manner: temperature, supersaturation of the atmosphere with water vapor, and speed of falling all have an effect. Most crystals grow under natural conditions not far removed from the diagonal line representing water saturation. The dotted lines to the left of "dendrites" and "needles" show how the speed of falling extends the zones in which those elongated forms grow. *(After Keller and Hallett (1982); figure from Hallett (1984))*