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? WHY THE WEATHER ?

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WHEN SNOW WHITENS THE GROUND

The early snows of winter often produce curious effects in whitening the ground here and not there. Why should this part of the sidewalk or road and not that become white? If, as in midwinter , all objects were below the freezing point, then there would be no differentiation in the rate of collection. But at this time of year the ground is not generally frozen except in the north. With the temperature of the ground surface and objects on it near the freezing point, there is at this time of year a good opportunity for diverse accumulation of snow.

It is evident that if after a short cold spell part of the ground has fallen below freezing while the rest has not there will be melting on the warmer surface. However, if the snow falls thick and fast even such a warmer portion of the ground may temporarily become white.

If snow continues falling for some time it will extract much heat from any surface that is not at the freezing point or lower. Thus, if the snow keeps on long enough it will stop melting, unless the air temperature remains above freezing. And it will stop melting much sooner on objects of low heat content and low conductivity than on pavements or rocks through which heat is readily transported from warmer depths to the surface.

Sometimes before a snow, the weather may be cold enough to freeze the more porous ground surfaces. Then it may turn warm enough to thaw out grass and dead leaves before the snow descends. Under such conditions both good storers of heat and the poorest ones will melt the snow, while surfaces of intermediate heat storage and conduction will hold it.

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