No.797

Nov. 30

A Science Service Feature

? WHY THE WEATHER ?

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SLEET

Snow sometimes changes into sleet, a type of ice precipitation that rattles against windows or stings the face in a strong wind. These particles of ice are roundish and usually somewhat irregular or angular in form, and generally smaller than summer hailstones. Some of the pellets may be of nearly clear ice, representing frozen raindrops. But usually sleet, at least near the core, is cloudy or bubbly in appearance, indicating that the sleet particles are most commonly snowflakes which have been partly melted, and then refrozen.

Suppose first that it is snowing and air temperatures both aloft and at the ground are below freezing. Now a southerly wind, with a temperature of 40 degrees or so in its warmest portion begins to run over the cold layer near the ground. At first, the portion of this warmer wind that is above freezing, is very thin, and the snowflakes falling through may become only slightly wet and then stiffen in the cold surface air. The soft snow thus changes to snow pellets. As the warm layer thickens, the snowflakes melt partially in passing through , but before reaching the ground must fall through the lower cold layer and so freeze again, arriving as sleet. If the south wind increases and the zone with a temperature above freezing thickens still more the lower cold layer may be blown away and a mixture of rain and sleet or rain only may fall through the cold air near the ground. The rain freezes on striking cold objects, making a glaze of ice. Finally, the rain may fall without freezing at all. This is a fairly common sequence in winter--snow, snow pellets, sleet, ice storm , rain. All forms may occur in succession at one place, or one storm may give snow in the north, rain in the south, with sleet between.

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(Tomorrow: Protecting Plants For The Winter)



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