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A Science Service Feature

? WHY THE WEATHER ?

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THUNDERSTORMS IN WINTER

Thunderstorms are so unusual in winter that we almost forget that they do sometimes occur at this season. The local, or heat thunderstorms, which are so frequent in summer are, however, lacking; winter thunderstorms are all of the general, or so-called cyclonic type. Every thunderstorm indicates an unstable, top-heavy atmosphere, with heavier, cooler air above and much warmer air below. In summer, the sun's vigorous heating of the lower air readily produces these conditions by afternoon, making local thunderstorms every few days. In winter, the sun is too feeble to cause strong enough local temperature contrasts to overcome the handicap of the small amount of vapor present at this season in continental interiors. Only the sharply contrasting winds of strong lows can produce sufficiently violent convection for thunderstorms in winter.

A recent compilation of thunderstorm statistics for Cincinnati, Ohio, by W.C. Devereaux, shows that thunderstorms are more than 30 times as frequent in mid-afternoon in July as at any time of day between November 1 and March 1. In these months the frequency for different times of day varies little; but in July the daily range is very large, thundershowers being 15 times more numerous at 4 p.m. than at 9 a.m.

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