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? WHY THE WEATHER ?

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HAIL, WATERSPOUTS, AND TORNADOES

Hail, waterspouts, and tornadoes are phenomena belonging to a family of local violence. How hard would you have to blow even to keep a nearly solid rubber ball of small size suspended in the air? Figure how strong an upward draft would be required to keep a baseball from falling if dropped from an airplane, andyou will have some idea of the sort of updraughts that must occur inside the clouds where hailstones of such size are formed. To suspend a big hailstone the wind must go upward as fast as that hailstone could fall downward in still air from a height of several miles, or, if the hailstone is only an inch in diameter, at a rate of 50 feet per second, or about 34 miles per hour.

Waterspouts and tornadoes are very naturally associated with each other in that both are violent whirls of small diameter, the waterspout being the whirl over water, and the tornado the same sort of whirl over land. A waterspout on sweeping ashore becomes a tornado, and a tornado on leaving land and passing out over a body of water becomes a waterspout. The old term "landspout" is to most people more descriptive than "tornado" of Spanish or Portuguese derivation.

The relationship between hailstorms and spouts is not so obvious. Their occurrence in conjunction with one another is strongly suggestive, however, that large hail is commonly dependent on the sustaining power of a vigorous whirl inside the towering cloud thatusually harbors the hailstorm. Tornadoes have often been followed by violent hailstorms farther along the line in which the tornado was going when it weakened and left the ground. When a number of violent storms are occurring some may be tornadoes and others hailstorms in the same general region and with parallel paths and corresponding velocities.

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