A Science Service Feature

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? WHY THE WEATHER ?

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RAINDROPS DESCEND FAST

All raindrops do not fall at the same rate. The smaller the drop, the more slowly will it descend, other things being equal. The small drop has a larger surface in proportion to its mass than a bigger drop, and, therefore, is more retarded by air resistance. In a vacuum droplets of all sizes, like the classic feather and penny, would fall at the same rate.

Every raindrop falling through still airhas a maximum possible velocity which is determined by the size of the drop. The raindrop attains its greatest speed when the air resistance it encounters exactly balances the acceleration due to gravity. Raindrops do not greatly exceed a fifth of an inch in diameter because larger drops tend to flatten in falling and break up easily into small ones. A drop a fifth of an inch in diameter falls at a maximum velocity of 25 feet a second. A drop one sixteenth of an inch in diameter can attain a velocity two-thirds as great, or about sixteen feet per second. Ten feet per second is the speed limit for still smaller drops, with a diameter of one fiftieth of an inch. Perhaps 10 per cent. of the rainfall in an ordinary shower is duo to drops less than this small size. In a thundershower, larger drops are the rule; while in the "Scotch mist" type of precipitation is made up of the fine variety.

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