

A Science Service Feature

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? WHY THE WEATHER ? Mailed January 13, 1930.

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CLOUD PARTICLES

The high feathery clouds known as cirrus and cirro-stratus consist of ice crystals, but all other clouds are composed of water in minute droplets. Since water is a comparatively heavy substance, and since, moreover, raindrops are seen to fall rapidly, most people are puzzled by the fact that a cloud "floats on high o'er vales and hills."

Wordsworth's familiar line does not describe the process with scientific accuracy, as clouds do not actually float, but the tiny particles settle down very slowly against the resistance of the air, or are borne aloft by slight upward currents. The speed with which a drop falls through the air depends upon its size, being very small for small drops, and an average cloud droplet is only something like $\frac{1}{800}$ inch in diameter. Millions of such drops must be combined to form an ordinary raindrop.

Observers on mountains and in aircraft have made counts as well as measurements of the cloud droplets, and these reveal the fact that most clouds contain a surprisingly small amount of water. If an average cloud a mile deep should fall to the earth and if none of the water in it evaporated on the way down, it would yield only about six-hundredths of an inch of rainfall--a very moderate shower.

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