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? WHY THE WEATHER ?

Dr. Charles F. Brooks,  
Secretary, American Meteorological Society,  
discusses:

RAINCLOUDS AND RAIN

Dark clouds always suggest rain. Even when there is nothing more than a dense pall of forest fire or city smoke, people carry their umbrellas or raincoats. There is ample justification for this, for usually when the daytime sky becomes dark, rain or snow follows. Furthermore, rain seldom falls except from a dense cloud. Therefore, the raincloud which weather observers the world over call nimbus is of this character, though not all dense clouds are nimbus.

The nimbus cloud is produced chiefly by the expansional cooling of rising air caused by the converging of air currents, by the upward deflection caused by land barriers or barriers of dense air, or by cold air underrunning warm air. The cooling which causes condensation often results, in part, from the mixing of warm air with cold, but chiefly by the expansion of warm air as it rises. In these ways, nimbus clouds are formed, to pour out their contents as rain.

A subdivision of the nimbus type is the fracto-nimbus, commonly called scud, a low, detached cloud, too thin and mist-like to produce rain, seen drifting beneath the heavy nimbus at an elevation of from 300 to 1000 feet. It is caused by the turbulence of the surface wind cooled and moistened by the falling rain. On hill and mountain sides the nearby saturated warm air in the woods and valleys is forced up by the cooler air high enough to form the valley steam clouds, familiar to those who live in mountain country.

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(Tomorrow: Clouds as Wind Indicators)

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