

July 9

? WHY THE WEATHER ?

Dr. Charles F. Brooks  
of Clark University.  
tells of:

CALM HEAT FAVORS THUNDERSTORMS

On what sort of days should we expect thunderstorms? Sir Frederic Stupart of Canada has made a study of pressure and weather conditions on days on which thunderstorms were more or less general in the Canadian Lower Lake Region. This investigation covered a period of five years.

One of the first conditions favoring thunderstorms is a warm or hot day. Classifying thunderstorm days by temperatures, it appears that on less than three per cent of such days was the maximum temperature below 50°, on only 5-1/2 per cent between 50° and 60° Fahrenheit, and on about 16 per cent it lay between 60 degrees and 70 degrees. Still higher temperatures, however, are still better for thunderstorms; for on nearly 42 per cent of the thunderstorm days the highest temperature ranged between 70 degrees and 80 degrees Fahrenheit, while in about 35 per cent. it exceeded 80 degrees Fahrenheit. Statistics from farther south would probably show the maximum number of thunderstorms on days in this last class. Strong heating is required to produce the typical convectional, or local, thunderstorm, though the "line" thunderstorm may occur on the boundary of criss-cross winds. Thunderstorms will not develop, however, even on hot days if the air is unusually dry.

To establish the regular thunderstorm type of convection, we need, besides high temperatures and moisture, freedom from strong winds. Such winds keep mixing the atmosphere and prevent local overheating. Thus, it was found that nearly 80 per cent of the thunderstorms occurred on days with not more than a moderate breeze, and only about 20 per cent on days when the breeze was fresh and strong. Probably a number of the latter were line thunderstorms, in which opposing winds of different temperatures rather than convection, provided the necessary overturning of the air.

-----  
(Tomorrow: Thunderstorms in "Lows".)

All rights reserved by Science Service, Inc.,  
-----