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A Science Service Feature

? WHY THE WEATHER ?

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FIRE WEATHER

Next to the system of patrols, lookouts and fire-fighters maintained in the forests of the United States and Canada, the greatest safeguard of these forests from fire is found in the "fire-weather services" lately inaugurated in both countries, though not yet extended to all the principal forested areas of either. The chief function of these services is to predict spells of "fire weather." These predictions enable the fire-fighting forces -- which are conspicuously inadequate to the gigantic task imposed upon them -- to concentrate their efforts at the right times and places, and they also put loggers, lumbermen and other users of the forests on their guard at times when fires are most likely to occur.

The subject of the fire weather is complex, but there is one fact of outstanding importance in regard to it that has recently come to light -- the great part played by the relative humidity of the air in controlling forest fires. We formerly thought of rain and snow as the weather elements that protected the forest from fire, and drought and wind as those that constituted the worst fire hazards. Humidity was overlooked.

Snow protects the forest while it lies on the ground and rain while it is falling, but after the snow melts or the rain ceases dry air will cause the litter and other dead materials of the forest to dry very rapidly, creating a fire hazard. On the other hand, a protracted drought will not cause these materials to dry and become inflammable if the humidity of the air remains high, as may happen even in the most severe drought (when, for example, winds blow from a nearby ocean). A dry wind increases the fire hazard but a damp wind reduces it. A fog-laden wind has been known to put out a forest fire. Rising temperature generally means a fall in relative humidity, and is therefore a fire hazard. Hot weather also increases the danger directly by promoting the evaporation of moisture from the forest fuels.

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