

A Science Service Feature

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? WHY THE WEATHER ?

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FOREST TEMPERATURES

Thousands of young men in the United States are now enjoying for the first time in their lives the experience of camping in forests. It is therefore opportune to inquire how the temperature under the leafy canopy compares with that of the open country. Here are the facts:

On an average for the year the air of a forest in the temperate zone is slightly cooler -- not more than a degree or so -- than that of the unshaded land around it. In summer the forest air is generally a few degrees cooler than the air outside by day, and somewhat warmer than the air outside by night.

The daytime air of the forest is relatively cool, but not, as most people suppose, merely because the foliage shuts out the rays of the sun. A tin roof does the same thing. Indeed such a roof is a much more effectual shade than a canopy of leaves, but it does not afford a comfortable retreat beneath it from the sun's heat. The roof grows hot and heats the underlying air. The leaves do not grow hot, as they are kept cool by the active evaporation of water from their surfaces. It is this process, chiefly, that accounts for the coolness of forest air on a hot summer day.

By night evaporation from the leaves is checked and is often replaced by the reverse process -- condensation from moisture from the air in the form of dew -- which tends to keep the leaves warm. At the same time they serve as a screen, which prevents the earth and the air beneath from radiating their heat to the sky. Hence the air remains relatively warm.

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