

A Science Service Feature

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? WHY THE WEATHER ?

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COLD STONES

Stone seats nearly always feel cold even on warm days, unless they happen to be in the sun. But wooden seats, swept by the same wind, may not feel cold. And when you sit on dry grass you may be quite comfortable. The sensation of coldness for stone and of warmth for grass may be due to a true difference in temperature even at the same time and place. But even if there is no contrast in temperature the stone will feel the coldest.

Close grained stone, like granite, feels colder than the more porous concretes. The difference in sensation is all a matter of conduction. If the stone penetrates to some depth in ground that is cold, its fairly good conductivity will remove heat from the surface to the interior fast enough to prevent the exposed part from getting so warm as a poor conductor like wood or grass. And when we place our hands in contact with the stone or sit on it the same conductivity removes heat from our warm bodies rapidly, and thus gives us a sensation of coldness. Wood and grass cannot take heat from us so readily.

These elementary facts concerning our simple sensations are of great importance in air temperatures over different kinds of surfaces. On a sunny day the poor conductor of heat, such as wood, loose soil, or dry grass, becomes very hot and thereby greatly heats the air in contact with it. The good conductor, however, taking the excess heat quickly into its interior does not get very hot on its surface, unless it is dark colored.

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