

A Science Service Feature

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? WHY THE WEATHER ?

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SNOW AND COLD WAVES

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The coldest cold waves come when there is considerable snow on the ground.

The explanation is as follows:

Our cold waves are caused by the flow over the country of very cold air from regions far to the northward. When this air passes over snow, it can go a long way without being much warmed, because snow absorbs little sunshine (reflecting about 70 per cent of all that falls upon it), and is, besides, a poor conductor of heat, so that only the top thin layer can furnish any heat to colder air above it. At night, especially under a clear sky, the snow surface cools rapidly by radiation; again because the top layer cannot get heat by conduction from the deeper layers or from the ground.

Bare ground absorbs most of the heat from sunshine and also conducts heat readily, so that the surface is warmed by heat rising from below. For these reasons cold air flowing over snow tends to remain cold, while that flowing over bare land tends to be more or less warmed up.

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