

A Science Service Feature

Released upon receipt
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March 30, 1935

? WHY THE WEATHER ? Mailed March 23, 1935

TEMPERATURE UNDER SNOW

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Authority on Meteorology

Snow, because it contains a great deal of air, is a poor conductor of heat and an efficient insulator, which protects the ground beneath it from extremes of cold. Some examples are furnished by records made at the Montana Agricultural Experiment Station, at Bozeman, a bulletin of which says:

"With an air temperature of 19 degrees below zero, the soil surface under only four inches of snow was almost 18 degrees above zero. With an air temperature of 25 1/2 degrees below zero the soil surface temperature under seven inches of snow was 17 1/2 degrees above zero.

"During a recent cold wave that swept the whole state there was about seven inches of snow at Bozeman. During four days of extreme cold, the lowest daily temperatures were 19, 27, 35, and 27, all degrees below zero. The soil surface temperatures under snow during this same period were 21, 19 1/2, 17 1/2, and 17 1/2, all degrees above zero. So, after four days of severe subzero weather the ground surface cooled off only about 5 degrees. It will be readily seen, therefore, that there would have to be a cold spell of unusual duration to affect seriously ground temperatures under snow.

"The soil itself is only an indifferent insulator, and in the absence of a snow covering the temperature twelve inches deep will be only 5 or 6 degrees higher than the air temperature."

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