

A Science Service Feature

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? WHY THE WEATHER ?

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RAPIDLY ARRIVING COLD WAVES

When Medicine Hat, in the Canadian Northwest, experiences a cold wave, people farther east are inclined to expect that the rapid fall in temperature to low levels will reach them almost immediately. Sometimes they are fully justified in their expectations, but often they are not. There are certain features on the Weather Map that enable government forecasters to tell when a western cold wave is going to move rapidly eastward, and when, instead, it will simply slide southward or southeastward principally over the Mississippi Valley.

The front of a cold wave is almost invariably marked by a low pressure area, with a south wind in advance of the cold north one.

When the cold mass is of limited extent and is confined to the Canadian Northwest, the frontal low is likely to move northeastward or even north-northeastward, while southerly winds may continue over the East for some time. A distinct fall in temperature in the East will then come when the air spreads eastward or even northeastward from the cold interior.

But when the cold air is of great extent eastward, though still beyond the field of observation, the wind aloft will carry the low rapidly eastward, and the cold wave will arrive in the East soon after the western end of its front came within the field of observation.

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