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A Science Service Feature

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? WHY THE WEATHER ?

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COLD WAVE OUTPOSTS

North America's equipment for cold-wave forecasting is better than ever before. Several new radio reporting stations, Forts Simpson, Dawson and Mayo, have been established in the Yukon and the Mackenzie Basins to keep us informed of the weather where most of the cold waves come from. These in conjunction with the Alaska stations, for many years practically our only cold wave outposts, can warn us of the up-piling of great masses of cold air over the northern interior. Such accumulations appear to precede the outflows that descend on us as our cold waves. Still, because of the eastward trend of the weather in response to the general circulation, the Alaska stations are our most valuable ones. Indeed, it is regrettable that no reports are received from places even farther west, such as Siberia, where the coldest known weather on earth occurs.

A great permanent low pressure area, the North Pacific or Aleutian "low", largely controls the characters of the winters in western Canada, whence comes much of our cold weather. In seasons when this "low" is very deep and far north, it spreads over the Yukon, and into the Mackenzie Valley, and appears to prevent the formation of anticyclones ("highs") and leads to a prevalence of southerly winds over the Canadian western provinces and northwestern states. On the other hand, when "highs" prevail conditions are right for a cold wave. Possibly the temperature and position of the Japan current partly control this North Pacific "low", just as the Gulf Stream seems to influence the North Atlantic centers of action.

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(Tomorrow: "Snowy Thanksgivings")

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