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? WHY THE WEATHER ?

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WARM WINDS FROM ICY HEIGHTS

"The temperature...was minus 13 degrees. The air was scarcely moving and the sky was clear. Suddenly over the edge of the mountains in the southwest appeared a great bank of black clouds, their outer edges blown into tatters by the wind. In a few minutes a short puff of hot dry air had reached the plains and in the following seven minutes the temperature had risen 34 degrees. The wind increased in velocity to 25 miles an hour and the temperature rose to 38 degrees. Within twelve hours every vestige of the thirty inches of snow had disappeared and the famine stricken cattle were again able to get food."

This occurrence of December 1, 1896, at Kipp, in northwest Montana, is often repeated, though usually in less pronounced form, every winter along the east front of the Rocky Mountains. In the course of a few hours, there have been rises of 70 or even 80 degrees Fahrenheit.

On the borders of Greenland and Antarctica the warmest winds come from the ice caps. On the east coast of Greenland a temperature of 61 degrees Fahrenheit was once observed with a gale off the ice cap. Even in the dead of the dark winter in northwest Greenland thaws take place when the wind blows strongly from the ice cap. An upward bound of 60 degrees Fahrenheit from 30 degrees below to 30 degrees above zero has been observed in but 30 minutes, and a rise of 80 degrees in a day.

In each case the wind that became, paradoxically, so warm first rose in passing over the mountains. Expanding and cooling caused it to precipitate some of its moisture. But as long as precipitation occurs heat is liberated, thus the air could not continue to cool greatly during its ascent, and reached the summit not much colder, but considerably drier, than at the start. The dry wind descending on the lee side of the mountains or ice cap was then so much warmed by compression that it reached temperatures well above freezing. Such is the typical chinook of the Rockies or foehn of the Alps and other parts of the world.

(Tomorrow: Great Temperature Declines)
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