UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

CHATS WITH THE WEATHER MAN — RELEASE Friday, February 19, 1932

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ANNOUNCEMENT: Now let's have our chat with the weather man. The unusually mild winter in the eastern United States still has a lot of folks talking and figuring -- so our old friend, Ob. Server has been asking the meterologists of the United States Weather Bureau about what is behind it ----------
All right, Mr. Ob. Server, what did you find out?

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Well, there has been a lot of speculation about the mild winter, in the eastern half of the United States. As usual in cases of so-called "freak weather", there have been quite a few extraordinary explanations advanced to account for it. --- That is the way with some people, they always try to explain the unusual by something still more unusual, or mysterious, or complicated. Others just accept it as one of those things that "passeth all understanding."

But from what the meterologists of the United States Weather Bureau tell me the causes are reasonably well known to our weather scientists.

In fact, Principal Forecastor C. L. Mitchell says the immediate causes of warm weather or cold weather are exceedingly simple.

It is all a matter of the movement of the air. Whether we have warm weather or cold, depends on where the air is coming from, and, to a considerable extent, on how fast it is coming.

For example, if cold air is coming from the Arctic, and moves down slowly it has a chance to warm up a bit. On the other hand, if it gets down in a hurry it doesn't have a chance to warm up much. The same principle is true in case of warm air. If it comes fast from the south, it doesn't have chance to cool down so much before it gets to us.

Well, that's simple enough. But why does it move fast sometimes and slow at others?

Of course, you know the answer. It is the difference in the pressure. The more difference in the pressure the faster the air moves. The heavy, cold, dense high pressure air usually drifts toward the light, warm, thin low-pressure air. The sharper the differences in pressure, the faster the movement.

If you watch the Daily Weather Map in your paper or posted in some public place, you'll notice how those changes are recorded. Those sweeping curved lines across the face of the map connect the points where the barometers show the pressure to be the same. If those lines are drawn relatively close together, you see there is considerable difference in the pressure, which causes fast movement of air. If the lines are relatively few and far apart, you know the differences are more slight and the air in that region is likely to move more slowly.

Now let's consider this question of winter time weather in the eastern half of the United States. Ordinarily, the cold, heavy air from northern Canada and the Arctic drains down into this country in a southeasterly direction. Whether that cold air movement will reach any given place quickly or slowly, or whether it will ever get there at all, depends on the conditions of pressure between that place and the oncoming cold air. If pressures progressively high toward the source of cold air, conditions are right for that cold wave to come right ahead. But if there is a considerable area over which the pressures are low somewhere on the route between us and that cold air moving toward us, it may block off the cold air movement.

As I gather it, during this unusually mild winter in the eastern half of the United States, the distribution of those high and low pressure areas have been such as to prevent the usual amount of cold air moving down from the Arctic to give us what we think of as our regular variety of winter. From the forecasters standpoint, it just hasn't been on the map for us to get cold weather in the Eastern United States.

But you say, why has the air been unusually stagnant, and why have we not had the usual flow of cold air from the Arctic.

Well, as Dr. W. J. Humphreys, meterological physicist of the Weather Bureau, explains it, it is largely a matter of supply. There is just so much cold air and so much hot air. Air is constantly being cooled in the polar regions, and constantly being heated in the equatorial regions.

It is the interchange of air between those regions that sets up the circulation of winds which so largely make the weather the whole world around.

Well, now, there is just so much air around this globe of ours. The air at the poles is constantly being cooled. That cold air must go somewhere. It must drain down to the lower, warmer latitudes. And of course it goes the easiest way. One of its favorite routes is down the McKenzie Valley through Canada, because from the Arctic to the Gulf along that route there is no high land to stop it. If it hasn't come that route this year to the usual extent, it must have gone somewhere else. And Dr. Humphreys says that is just what it has done. It has spilled over the other side and drifted down into Europe, and made colder weather than usual, there.

It can't go out over western Siberia, for that is high land and cold air doesn't run up hill. In fact, Dr. Humphreys says we may at times get part of our cold from Siberia, as it drains from that higher land into the polar regions and on down to us.

As we pointed out awhile ago, whether the air movement is one way rather than another is due to pressure conditions. Our usual supply of cold air from

the North took another route because pressure conditions were more favorable to such a movement.

And if you have one of those inquiring minds that insists on knowing why the pressure conditions were unusual, I'll have to admit that you are pushing me too far, and right into some complicated questions.

Perhaps we had better not go into those questions right now. But when you get to figuring on reasons for difference in pressure, you find yourself right back to questions of movement of air currents; not only here at the surface, but at many different levels right on up as far as there is any air.

For you know that with our barometers we measure the pressure or weight of a column or cross-section of our atmosphere from top to bottom where we are. Cool, heavy air gives us high pressure measurements. But that measurement is the total for the whole column. The air column that is on the average cool, may represent air of many different temperatures at the different levels. Changes in the air far above where airplanes go may help produce changes in our pressures here below.

What may seem unusual and mysterious in the vagaries of the weather might be plain if we fully knew the intricate interchange between the ever shifting winds which make up the complete air circulation of this old globe of ours.

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ANNOUNCEMENT: You have just heard another of our bi-weekly chats with the weather man, presented through Station ---------- by the United States Department of Agriculture.

National Oceanic and Atmospheric Administration

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