

CHAT WITH THE WEATHER MAN:

RELEASE Friday, June 13, 1930.

ANNOUNCEMENT: We are now ready for our bi-weekly chat with the weather man. Our old Ob. Server visits with the scientists of the United States Bureau, and then passes on to us what they tell him. ——— Here he comes now ———
Hail! old Ob. Server! ———

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All hail, folks! ———

You've all heard a lot of hard stories about hail stones.

Hail-stones as big as hickory-nuts, or even as big as hens' eggs, break into the papers from time to time. When the stones reported are much bigger than that, most of us are inclined to take the stories with a grain of salt. Naturally, the salt melts the ice down, so we can swallow the hail-stones.

However, I've been looking through some of the records at the United States Weather Bureau. There are well-authenticated instances of hail-stones, not only as big as hens' eggs; but as big as base-balls, and even as big as grape-fruit.

For instance, four years ago, there was a big hail storm at Dallas, Texas, in which many of the pellets of ice were as big as base balls. Some were reported as two to four inches in diameter. They weighed as much as twenty-two ounces. Scores of people were injured and horses were said to have been killed.

However, the storm at Potter, Nebraska, two years ago seems to hold the world's record. Out of that shower of ice in chunks as big as grape-fruit came one which measured seventeen inches in circumference and weighed a pound and a half; according to the sworn statement of the man who did the measuring. It was smooth, clear ice. When he cut into it, he found it was formed of several distinct layers of ice around a common center. You may have noticed that is generally the case with hail-stones. They have a number of concentric layers; often a layer of hard clear ice and then a layer of soft, snowy ice.

Mr. J. B. Kincer, in charge of the Weather Bureau's Division of Agricultural Meteorology, who was telling me about hail, says those concentric layers show the up-and-downs in the life of a hail-stone.

Maybe you have wondered why we have showers of ice in hot weather? Hail is distinctly a hot weather proposition. You may have noticed, it usually comes with a thunderstorm. As Mr. Kincer says, thunderstorms always have a strong upward wind or current of warm air. That big updraught catches up

rain-drops and carries them far up into the colder air where it is cold enough to freeze them into balls of ice.

They start falling. They reach the warmer air and more water collects around the ice. They may again be caught up by the rising air-current and carried swiftly up to freezing heights. They may make several up and down trips, adding a layer each trip, until they get too heavy and drop to earth as hail.

That is just the opposite from the way sleet is formed in the winter-time. Those tight little pellets of hard ice we call sleet, are formed by drops of water in warmer upper air freezing as they fall through the cold lower layers of air.

Hail storms are one of our most erratic, irregular types of storm. Whether hail forms is largely a question of whether or not the up-current of warm air is strong enough. That is why hail usually comes with a severe thunderstorm. It is formed only when thunderstorms are at their height.

Such a strong up-movement of air, much like a fire in a chimney, usually covers very little country at a time. There may be a severe hail storm on one farm while the farm next to it is untouched by the ice. Usually, the fall of ice lasts only a few minutes. The thunderstorm sweeps on, probably at the rate of from thirty to forty miles an hour, and carries the narrow draft of warm air with it.

A hail storm may be gone but not forgotten. Hail-stones so big and storms so severe as to kill animals and injure people are rare. But the damage done to farm crops by even a moderate hail storm is considerable.

The United States Weather Bureau collects and publishes the number of hail storms reported throughout the country. The damage done to various crops is also estimated. Of course, Mr. Kincer says, these are merely rough estimates. It is practically impossible to determine the damage exactly.

However, in a severe hail-storm year, the total damage done by hail to corn alone has been estimated at 34,000,000 bushels. That year hail reduced the yield by nearly one and a half per cent.

Wheat damaged during a heavy hailstorm season has amounted to about two per cent of the total crop or seventeen million bushels. That doesn't seem such a large percentage, but when you recall how local and how spotted hail storms are, you realize that means tremendously heavy damage in some regions --- sometimes even total loss of the crop for some farmers. For example, a loss like this for a single season is equal to the destruction of the entire wheat crop of more than one thousand farmers if their crops should average one hundred acres each.

The hail often comes just before wheat harvest and the flails of ice shatter the heads and beat out the grain. In the case of corn, the damage often seems to be harder to estimate but no less real. The South Dakota Experiment Station made what you might call an artificial hail storm. That

is they tore leaf blades and broke corn plants in imitation of the way they are damaged in hail storms. Other plants were left undamaged for purposes of comparison. Plants that had all the leaf blades stripped off produced a little over two bushels to the acre as compared with twenty bushels to the acre from the undamaged plants. The most critical time for a hail storm to strike corn is in the period from tasseling to kernel formation, the South Dakota experiments seemed to show. Damage at that time reduced yields most.

Some years, Mr. Kincer says, hail storms are rather evenly distributed over the country. Other years, they may be bunched in a few states. As a rule, practically no hailstorms take place on the Pacific Coast and very few in the Gulf Coast country. The records show that the upper Mississippi Valley and Great Plains States have the biggest number of hail storms. But even in that region hailstorms vary greatly from year to year. In 1928, there were an unusually large number in Michigan, and Kansas, and northeast over Missouri and also in Montana.

However, there is nothing that we can do to stop them or control them or very little we can do to protect our crops from them, Yet the U. S. Weather Bureau seeks reports of any hailstorms which may happen. By charting the number of hailstorms, in different sections of the country, the Weather Bureau gives valuable help to both farmers and insurance companies; in giving them a fair basis for estimating the cost of the risk in hail insurance in different regions.

Then too, if it is weather, the U. S. Weather Bureau watches it. The more information on all phases of the weather we have, the better position our scientists will be in to solve some of the weather's yet baffling secrets.

ANNOUNCEMENT: Hail and Farewell to old Ob. Server until this two weeks from today. These chats with the weather man are presented by Station _____ in cooperation with the United States Department of Agriculture of which the U. S. Weather Bureau is a part.

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National Oceanic and Atmospheric Administration

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July 23, 2010