Look Out For The Rainmakers

Meteorology

Hot Weather and Drought Brings Them Out

Can cannon and brewing chemicals bring rain? Meteorologists say, No! But when drought threatens the destruction of crops, so-called rainmakers continue to collect thousands of dollars from owners of parched fields in the arid Southwest.

WITH ONE of the most general droughts ever experienced in the United States now threatening all kinds of crops, it is likely that the "rainmaker" will come into his own, taking advantage of the desperate straits of the farmer to fill his own pocket. For the rain-maker really bets on a sure thing. If he fails, his losses are practically negligible, but if rain does follow his efforts he takes full credit for it, and the cash as well. Many real scientific experiments have been made to test rain-making methods, but have never yielded the slightest evidence that anything man can do has any effect on starting or stopping precipitation.

Dr. David Starr Jordan, president emeritus of Stanford University, once exposed the rain-maker and his methods, showing how effective they are, as a means of making easy money.

He works it this way. He goes to an ordinarily prosperous farming region where a long continued drought threatens heavy losses and puts up to the farmers a proposition like this:

Their Proposition

"If rain doesn't come soon you farmers in this neighborhood may lose hundreds of thousands of dollars. Now with my secret method I can surely bring rain. It will cost a lot to do it, so I'll have to charge you $10,000 for my services. But to show you that I am perfectly fair, I will not charge you if I fail. We'll sign a contract that if I bring an inch of rain here within the next two weeks you will pay me $10,000, which is much less than you'll lose if rain doesn't come. In the inconceivable event that I cannot bring rain, you won't have to pay me anything, so you have everything to gain and nothing to lose."

Such a proposition as this looks perfectly fair and the farmers accept it. The rain-maker then proceeds to set up his apparatus, which may resemble a huge cannon pointing upwards, in which he sets off some explosions. Or he may have some large caldrons, in which he brews a mysterious mixture that gives off lots of impressive smoke. Just what method he uses is immaterial, since it has nothing to do with the rain. Its sole function is to impress clients, and this can be done at a cost of a very few dollars.

No drought lasts forever, and the longer it has continued the more likely rain is to come. So perhaps it starts a few days after he begins his manipulation. The rain-maker announces that he has brought it, collects his $10,000, or whatever figure he has set, and goes on his way to some other drought-stricken section. If the drought does continue, and the end of the specified time sees no precipitation, he packs up and goes his way without any payment, unless he can get his contract continued. Even if he cannot, his only expenditure has been his time and a few dollars for chemicals.

Since it is merely a matter of chance whether or not rain follows the efforts of the rain-maker, he would probably win about half the time. And $10,000 for a couple of weeks' work is good pay, even if he only works at that price for a month or so a year. To be really fair, he should offer the farmers a forfeit of $10,000 if he fails. But no rain-maker has ever been known to do that.

What Causes the Heat

HOT AIR from Texas, and the neighboring states in the southwest, is the cause of the heat wave from which most of the United States east of the Rockies has been suffering. This heat wave, though rather unusually severe, is typical of the usual progress of such a wave, according to Dr. C. L. Mitchell, of the U. S. Weather Bureau.

The southwestern states remain continuously hot in the summer, but ordinarily the influx of cold air from Canada and the Northwest confin it to those states. But when this high pressure area over the north Pacific fails to send the cold air over the mountains and down the Mississippi Valley, the high pressure over the southwestern states forces the hot air northwards. As it moves it is heated by the long hours of sunshine in the day, and the short nights do not give it time to lose the heat it gained in the daytime, so the temperature increases.

Thus, in the course of two or three days, the Middle West is in the grip of a hot wave. As the hot air encounters a high pressure area to the north, it is forced eastwards, and so the Middle Atlantic states experience it several days later. It takes roughly a week for the hot air to travel from the Texas region to New York. This process is typical, and has taken place with the latest heat wave. The one a few weeks previously, however, was somewhat different. A high pressure area in Canada came into action sooner than ordinarily and forced the hot air to the southeast, bringing abnormally high temperatures to the South Atlantic states, while those farther north enjoyed the cool air from Canada.

The Break-up

The break-up of a heat wave such as this comes when cool air from the north sweeps in to take its place. As the cool air encounters the warm circulation is set up which results in local thunderstorms. These are, therefore, not the cause of the cooling, but another manifestation of the process that does cause it.

Such heat waves occur frequently during the summer, though fortunately they are not all as severe as the last one, which brought an all-time high temperature record to Washington, D. C., with 106 in the shade. Sometimes they are much more prolonged, like the famous one in 1901 that began late in June and continued with hardly a break until almost the end of July. At many towns in Missouri, Kansas and Nebraska the temperature rose to above 100 degrees nearly every day in this time, and sometimes reached 110. Such a heat wave causes immense damage to the crops. One in 1894 was estimated to have caused more than $50,000,000 worth of damage in Iowa alone.

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