

NOT FOR PUBLICATION

ANNOUNCEMENT: Uncle Sam has a special WEATHER CHAT for Station \_\_\_\_\_'s radio audience today. It deals with long range weather forecasting, that is forecasting the weather weeks, months, seasons, or even a year ahead. A good many people have been wondering what the Weather Bureau is doing about this kind of forecasting --- whether it's really practical --- whether it's really scientific. Well, the Weather Bureau is studying the matter with care and attention. And in today's CHAT, the Chief of the Weather Bureau makes a statement on the matter. So please stand by.

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The Weather Bureau of the U. S. Department of Agriculture will employ long range weather forecasting just as soon as it can be put on a scientific basis rather than a foundation of mere guess-work.

The Weather Bureau and other scientific agencies have, for a long time, been studying the possibilities of long range forecasting. To date, no practicable means have been devised and so-called forecasts of this character are no better than mere guesses.

The entire scientific staff has the utmost confidence in the soundness of the scientific views and practices of the Weather Bureau and believes that these will stand the most sincere scrutiny of honest, capable, unprejudiced scientists. The weather chief's statement follows:

"Throughout the past several hundred years, there has seldom been a time when one or more long range weather forecasters have not sought to interest the public in their sensational claims. These have flourished for a time, only to pass into obscurity. Neither the claims nor the theories have been able to survive the inexorable test of time.

"Similarly, from time to time since the establishment of the Weather Bureau in 1871, some such forecasters have tried to advertise themselves and their views by violent abuse of the Federal officials for not endorsing their claims. The same thing has happened in England, France, Germany, Italy and elsewhere. Instances of such forecasters operating independently of and in conflict with the collective experience and knowledge of the professional meteorologist are old stories.

"In contrast to these, another class of students apply their time and efforts along sound and accepted scientific lines to solve the problem of long range forecasting by honest and intelligent effort. Professional

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meteorologist feel no hostility towards these earnest students. As a matter of fact, leaders in this class are to be found both within and without the great national services, and cordial friendship and cooperation prevail between all such private and professional workers.

"Within the United States the Weather Bureau holds a leading place in this line of meteorological progress, and the pages of its Monthly Weather Review carry many notable and original contributions of a progressive character, dealing with sunspots; solar radiation; solar and terrestrial correlations; the laws of sequence of weather conditions; the dependence of present weather in one part of the globe upon antecedent conditions somewhere else, etc.

"These topics collectively embrace all the known possibilities upon which long range forecasting can be rationally based. The meteorological library of the Weather Bureau is unique as a collection of publications of the widest scope, covering the field of meteorology and related sciences.

"For several years past one official has devoted practically his entire time to the review of past and current literature and the prosecution of special studies in the field of long range forecasting possibilities. In addition, others of the bureau, including the chief of the bureau himself, have given special attention to this line of inquiry. Any suggestion that will stand the test of analysis and possesses the promise of real forecasting value is welcome. The public may be well assured that the Weather Bureau speaks with authority, based upon positive knowledge, on any of these questions of long range weather forecasts.

"While the prolonged researches of the professionals have disclosed thus far little more than encouragement, faint suggestions, possible clues --- something to be studied further --- the self-constituted forecasters seize upon, distort and exaggerate the suggestions of the students, and paraphrase their technical language into plausible effusions in order to justify their claims and their guesses to the credulous public.

"What are some of the lessons we may learn from the experiences of the year 1927, just closed? It is perhaps without a parallel in America because of the publicity given a series of calamitous and sensational weather and crop forecasts, and the severity of the personal criticism heaped upon the ability and integrity of the Federal meteorologists. Hundreds of letters and questions were addressed during the year to the Weather Bureau and its station officials, seeking the opinion of professional meteorologists on these forecasts.

"A widely distributed bulletin for 1927', contained this statement:

"The forecast of 1927 for the United States and Canada is for a cold, dry year, taking the country as a whole. \*\*\*\* A cold wave will start in the northwest June 2, sweep across the corn belt as far south as the Ohio and

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Potomac. \* \* \* The period from June 28 to July 2 will see heavy frosts in portions of this same area, while the week from July 7 to July 11 will represent a second very dangerous date. The two periods in conjunction will have carried severe frosts and probably killing frosts through the great northern grain areas.'

"In another publication, this prediction was published:

' \* \* \* the years 1926-27 would be disastrous ones for mankind, in so far as extremely abnormal weather may bring disaster. \* \* \* It is impossible for the grain crops of the Northern Hemisphere to escape serious injury this year (1926). \* \* \* The world will come face to face with great danger in 1927, with its grain reserve exhausted. The great consuming populations of the industrial nations will be virtually reduced to the point of living from hand to mouth. The herds will be all but destroyed that the people may live. Europe's 1927 harvest will be destroyed by a repetition of the torrential and continuous rains of the terrible year 1315, black-lettered for six centuries. At the best, Europe will not have better than a 40 per cent harvest in 1927; America not better than 60 per cent.'

"To prepare for these impending disasters advice was given that,

"Our Government should buy and store our surplus wheat instead of trying to dump it into Europe below the cost of production.'

"It is unimportant who is the author of these and other predictions. They were widely circulated in advance; they disturbed the orderly course of business; influenced the prices of, and favored harmful speculation in agricultural products; unduly aroused public fear and apprehension; worked unnecessary injury to the farmer, and--were not in any sense verified, as may easily be completely proved by reference to the weekly and monthly bulletins and reviews of the Weather Bureau, including the crop statistics for the United States and the world issued by the Crop Reporting Board of the Department of Agriculture.

"To summarize these statistics briefly, there were no summer frosts except in a region along the northern boundary of the United States, where summer frosts are relatively common. For example, some parts of Michigan have had freezing temperatures or lower in every month of the year for 23 out of the past 30 years. A minimum temperature as low as 20° was reported from Michigan July 1, 1903. Some parts of Pennsylvania have had freezing temperatures in July in one-half of the recent years. These are usual conditions and they do not verify predictions like those quoted.

"Instead of the predicted cold, dry year, with a short growing season, weather reports for the entire year, just received, show that over more than

80 per cent of the continental United States, from coast to coast, and from the Gulf northward, the mean temperature for the period was above normal, and markedly so in many sections. Below normal temperatures were recorded only in limited areas along the northern border of the country between the Lake region and Rocky Mountains.

"Precipitation for the year was above normal over most of the country, and was unusually plentiful over the great interior agricultural districts, while the growing season, on the whole, was prolonged and favorable, being longer than normal practically everywhere.

"Moreover, it is now well known that American, as well as world, production of crops was, in general, satisfactory. In this country the latest official reports show the composite yield of 24 principal crops to be about 7 per cent above the 10-year average, and the yield of 7 principal feed and food crops of the world was more than 5 per cent above the average for recent years.

"In the closing months of the year a new claimant for laurels in the field of commercial long-range forecasting was exploited by an association of industries in one of the New England States in a letter, dated November 25, 1927, addressed to all its members.

It appears he forecasts the temperature and rainfall for Boston a week in advance. The account compares his forecasts with those of the Weather Bureau made one day ahead and represents that his forecasts were absolutely O.K. 244 times, as compared with only 148 times for the Weather Bureau. Also 298 week-ahead forecasts could be claimed as right compared with 207 such forecasts by the Weather Bureau. Efforts of this department to secure access to the details of the competing forecasts and methods of verification have thus far failed. But long experience compels the department to check up on all such statements before reaching its conclusions. The Weather Bureau official investigating this case ascertained:

"That the verification has been made by an officer of the local Chamber of Commerce. He had taken the Boston daily weather map issued by this department and had written on the back of it what he considered our forecast to be and added Mr. \_\_\_\_\_'s forecast. He next noted what he considered the following weather to be. He did not consult a thermometer at all to determine whether the weather was warmer or colder, or a rain gauge to determine the rainfall. He rather superciliously remarked that he could tell whether the weather was warmer or colder and did not need any thermometer. I suggested that his feelings might not be a correct guide and that other people might not feel the same. He brushed that away with a sweep of his hand and said that he knew his feelings were the same as the average man's and that was what was wanted."

"The correctness of forecasts of any kind can not be determined by any such loose method of verification as indicated in the foregoing, and suspicion especially surrounds the whole subject when details of the forecasts and verifications are withheld.

"It is axiomatic that weather forecasts, whether for a short or a long time in advance, if made on a basis of pure guess work, will be valueless, although they get a certain verification, depending entirely on the laws of chance. On the other hand, such weather forecasts, to be successful, must satisfy the inexorable laws of physics. Speculations and effusions which disregard either or both of these prerequisites are mere sophistry, if not deliberate fraud.

"How absurd it is to suppose that the many Federal meteorologists, either collectively or individually, oppose and obstruct the progress of their science, or that they captiously reject discoveries and new knowledge of any kind. These men are finding their life work in devotion to a great public service. They welcome, intelligently and earnestly, every honest new idea that is sound and promises practical utility. The public justly looks to these officials for leadership in all such questions, but the Government can not allow itself to be duped and misled by the various sensational claims and representations that are made from time to time in the press and otherwise. All these must be thoroughly sifted before acceptance.

"The Federal meteorologists are animated by only one incentive, which is to give to the public complete and up-to-date advices, bulletins and warnings concerning past, present and future weather, and flood and crop conditions.

"These bulletins and reports are required by law and are made impartially without fear or favor. They are issued for the benefit of agriculture, commerce and navigation, and to protect the public against misrepresentation and fraud."

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ANNOUNCEMENT: Another WEATHER CHAT will be broadcast by this Station on Wednesday, February 22. Watch for it.

# **National Oceanic and Atmospheric Administration**

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