

report of the Agricultural Meteorology Committee¹

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Current progress

The Agricultural Meteorology Committee of the American Meteorological Society has sponsored a series of conferences during the past two decades. These have come at approximately eighteen-month intervals. The most recent in this series was the Tenth Conference, held on the University of Missouri-Columbia Campus in June of 1971. Harold Johnson has reported the results of the First Conference on Biometeorology, held jointly with the Tenth Agricultural Meteorology Conference. This represents a significant change in the affairs of our Society, since a number of biometeorologists have taken active parts in previous Agricultural Meteorology Conferences. We all hope the two committees, and those attending future Conferences of both groups, will continue to have strong mutual interests.

The 1971 Agricultural Meteorology Conference presented a continuation of two major themes and an increase in interest in a third. In order, these are:

- 1) *Identification and analysis of the effects of weather and climate on plants and animals.*
- 2) *Measurement and understanding of weather events occurring at the earth-atmosphere interface, including turbulence, diffusion and water/energy budgets.*
- 3) *Simulation modelling of interactions between events in the atmosphere and plants or animals.* Quantified expressions of some important interactions are known. This, combined with the availability of large high-speed computer systems, makes it possible to conduct simulation model experiments. (The combined session of the Biometeorology and Agricultural Meteorology groups was devoted to simulation model work.) I expect that work in this developing area in future years will increase both in volume and complexity.

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Future needs

Solution to certain weather-sensitive problems can come from actual or simulated experimentation with physical/biological systems. But there are many important activities that present problems that require serious consideration of man's interaction with these systems. In the past we have been properly concerned with attempts to describe and explain the effect of weather events on plants, animals, structures, and economically important systems.

Recent scientific and technical advances have brought 1) increased understanding of the atmosphere, and 2) complex sensing, communications, and data processing systems which are capable of producing a virtually unlimited flow of data. These systems, and the technical and scientific personnel required for their development and operation, involve large costs. As a result, there have been serious attempts to estimate the economic value of meteorological information and to compare these estimates with the costs of the systems.

While budgetary considerations are important, a more fundamental reason exists for being interested in the economic impact of weather information. This is the strong belief that in the near future man can more effectively apply the rapidly improving flow of information to deliberate, rational attempts to improve significant segments of the economy.

The rapidity with which new weather sensitive problems are emerging often does not allow a traditionally slow, trial and error adjustment. Two prime examples (one from agriculture and one from industry) are:

- 1) Sudden emergence of the Southern Corn Leaf Blight in the 1970 crop season.
- 2) The deepening energy crisis.

Both of these problems are highly complex, and both have definite weather-sensitive components. Both of these problems are examples of economically important activities with the outcome of each partially determined by actual weather events and partially determined by decisions made by man.