

METEOROLOGY

To Probe the Upper Air In New Study of Weather

New England, Area Unexplored as a Weather-Breeder,
Will Receive One Month's Intensive Investigation

AN INTENSIVE, one-month investigation of weather conditions in the upper air, the first comprehensive study of its type ever attempted on the intricate vagaries of notorious New England weather, has been inaugurated by Harvard and Massachusetts Institute of Technology scientists, who are sending aloft the first of a series of radio meteorographs, a combined flying weather observatory and radio broadcasting station.

The aim of the project is to obtain a complete record of temperature, humidity and air pressure from the earth up into the stratosphere and thus shed more light on the forecaster's problem of how weather is "manufactured." New England was chosen for the research because of this area's interest to meteorologists as an unplumbed weather-breeder.

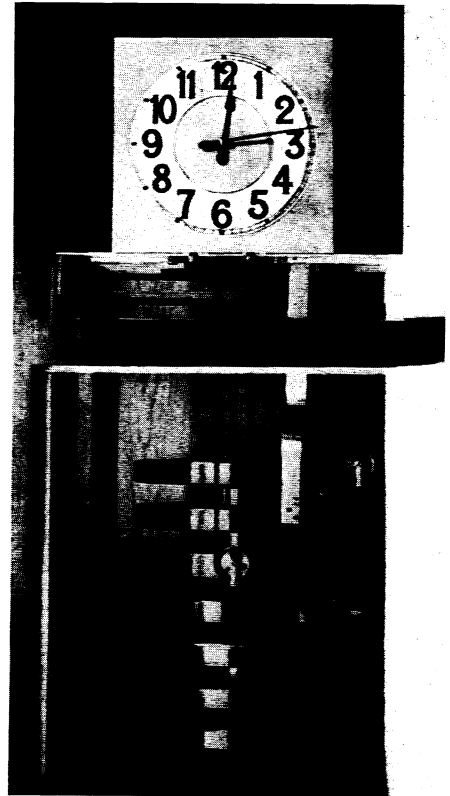
Recognizing the importance of taking daily sections of the weather, M.I.T. and Weather Bureau investigators have conducted airplane flights for the past six years, gathering much valuable

information through these flights.

In fog or snowy weather, however, when such information is most desired, airplane ascents have been too hazardous and it was to eliminate this loophole that the balloon-lifted weather stations were developed. They also have the added advantage of easily tripling the 20,000-foot airplane ceiling and thus reaching the really important heights in weather-formation. In preliminary tests, for example, one instrument reached the amazing height of 71,000 feet, well into the puzzling stratosphere and just below man's all-time ascension record.

How far the first balloon went is not known, for the automatic signals of the miniature transmitting apparatus were only followed as high as 25,000 feet. At that time a temperature of 40 degrees below zero Fahrenheit was recorded, in comparison with 24 degrees atop the Guggenheim Laboratory at Technology where the balloons were released.

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RUNS WITHOUT WINDING

For over 20 years the clock shown above has run without winding. In November, 1916, it was set in operation in the town of Orebro in central Sweden, and has run continuously on the power derived by changes in the barometric pressure of the atmosphere. Essential parts of the clock mechanism are seven metal boxes that are moved by the pressure. This movement raises the weights which run the clock. The power needed is estimated at one-millionth of a horsepower.

PLANT PHYSIOLOGY

Plants, Like Children, Have Finicky Appetites

SOME PLANTS, like some children, have finicky appetites. And like the spoiled brats, they refuse to eat unless coaxed. There isn't any way to spank them.

Prof. Lyman G. Schermerhorn, of the New Jersey Agricultural Experiment Station, blames just such a cause for hitherto unexplainable failures of certain vegetable varieties to produce their best crops under orthodox cultural methods.

Nutritional requirements of plants are just as various as those of animals, he observes in reporting that plant feeding experiments undertaken a year ago have already supplied many clues to solve the mystery of reduced yields.

"Each variety of a vegetable group requires different feeding," Prof. Schermerhorn points out, "and we'll have to learn how to feed them as varieties, catering to their whims regarding fertilizer preference and the exact time when a given variety of plant seems to want and need nutrition."

For example, he makes clear that plant feeding tests have already determined that large applications of nitrogen to different varieties of lima beans did not perceptibly increase the yields of the small varieties, but greatly increased the production of large-seeded limas. Tried on tomatoes, one popular variety was found to respond best to heavy doses of fertilizer early in the

season, while another variety produced best only when fertilized after its fruit started to set. Growers have always fed both varieties alike, Prof. Schermerhorn said.

The scientist predicted that "after the farmer learns to recognize that he can't feed all vegetable varieties alike, a great deal of confusion that now exists in the seed trade will be eliminated because the number of varieties will have to be reduced."

Improper plant feeding may even be so far-reaching as to cause the germination disorders in beans and other seeds which perplex both farmers and seedsmen, Prof. Schermerhorn suggested. Just like human beings, plants which are vigorous and healthy as the result of proper nutrition are more resistant to disease and frost, he said.

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