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SCHENECTADY, N. Y., Nov. 14 -- Scientists of the General Electric Company, flying in an airplane over Greylock Mountain in western Massachusetts yesterday, conducted experiments with a cloud three miles long, and were successful in transforming the cloud into snow.

Yesterday, G-E scientists announced the success of laboratory experiments in producing snow. Predictions made at that time that the same techniques could be applied in nature have now been fully confirmed with the successful experiments over Greylock, they declared today.

From a 14,000-foot level, the snow fell an estimated 3000 feet, but because of the dry condition of the atmosphere beneath the cloud, the snow evaporated before reaching the ground. In cloud formations of lower altitudes, which commonly prevail in winter, such a precipitation of snow would reach and blanket the ground, the scientists said.

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Vincent J. Schaefer, of the General Electric Research Laboratory, flew from the Schenectady airport in a small plane piloted by C. G. Talbot. Dr. Irving Langmuir, associate director of the Laboratory, and others, watched from the control tower of the G-E Flight Test Center.

"The plane took off about 9:30 a.m.," said Dr. Langmuir, "and gradually climbed to about 14,000 feet. By this time the sky was almost cloudless, except for a few small clouds about 50 miles to the east, which were rapidly disappearing."

As the plane flew through one of the few remaining clouds, Schaefer dispensed 6 lb of small dry-ice pellets over a tract about 3 miles long. The cloud transformation was quick. Dr. Langmuir said that "within two minutes from the time Schaefer signaled by radio that he was ready to begin, a radical modification of the cloud took place and streamers of snow began to pour out of the base of the cloud. Though it was more than 50 miles away, we could easily see all this with the naked eye," he said.

Though the cloud was of the stratus type, pillars of cumulus cloud began to rise from its top. The other clouds, which had not been seeded with dry-ice, had completely vanished by this time, about 15 minutes after the start of the experiment.

Dr. Langmuir said "the cloud could be seen as it moved away, until it was more than 80 miles distant. Then it went out of sight. We couldn't tell whether it had disintegrated or was obscured by haze."

Reporting on his observations from the plane itself, Mr. Schaefer said that before he dropped the dry-ice, the cloud showed the typical irridescent effects and corona caused by water droplets, when he looked through it at the sun.

After seeding it with the pellets of dry-ice, he flew below the cloud. He could easily see the snow crystals glinting in the sunlight, and there was a brilliant halo around the sun at a distance of 22 degrees, an effect caused only by ice crystals.

Dr. Langmuir cited several points which make these experiments significant.

First, he explained, they completely fulfill the predictions of the General Electric scientists, as a result of the laboratory experiments and theoretical calculations, that clouds in nature, from which no snow is falling, contain no ice crystals but consist solely of water droplets, even at temperatures well below freezing. Once such a cloud is seeded with the solid carbon dioxide pellets, which have temperatures of about 110 degrees below zero, the water droplets are converted into ice.

The heat which is generated by the freezing of the water produces turbulance in the cloud, which results in the pillars of cumulus that appear at the top. This turbulence, he said, enables the process to spread as a type of chain reaction and draws more moisture into the active region.

With a completely overcast sky, he added, a single plane should be able to produce huge amounts of snow in comparison to

the amount of carbon dioxide used. He estimated that a single pellet of dry-ice, about the size of a pea, dropping 2000 feet through the air, might produce enough ice nuclei to develop several tons of snow.

"In a five-hour flight," stated Dr. Langmuir, "a single plane could generate hundreds of millions of tons of snow over a large area. However, this would not necessarily mean a fall of more than a few inches of snow on the ground. There would have to be a continuing supply of moisture fed into the sky to produce a really heavy fall of snow."

Dr. Langmuir believes that the method can be applied during the winter to produce snow in regions where there are clouds which fail to produce precipitation. Thus a supply of moisture could be stored up for the spring months, to feed irrigation and water-power projects.

Though modern airplanes can fly in the stratosphere, well above the clouds, they often have to fly through clouds of supercooled water which cause dangerous icing conditions. Dr. Langmuir suggested that a single small plane, using Mr. Schaefer's methods, could clear an area of such clouds.

Snow might also be produced at mountain resorts for the benefit of skiers, he added. Also, clouds which appear to be destined to produce snowfalls over urban areas could possibly be made to produce snow in other areas, instead, thus alleviating the urban snow-removal problem.

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